FLIGHT

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Founder and Editor: STANLEY SPOONER.

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EDITORIAL COMMENT.

Dangerous and Unjustifiable Flying. A Difference.

THE report of the Accidents Investigation Committee of the Royal Aero Club on the fatal accident to Lieut. Kennedy, who was killed while flying as a passenger with Mr. Gordon Bell on a Martinsyde monoplane, is published this week, and deserves to be read with the closest possible attention by all who are interesting themselves seriously in the furtherance of aviation. As we had occasion to point out the other week, much unintentional harm may be done by spontaneous comment upon mishaps to pilots, for experience proves that no matter how simple the circumstances of the case may seem, their closer investigation seldom fails to reveal two sides to the main question, and the need for the exercise of thoughtful and unbiassed judgment before pronouncing an opinion one way or the other.

The present report has an especial interest and importance because it touches upon a much-discussed subject — to wit, the question of unjustifiable flying. We are very pleased to see that the Committee thus clearly puts before all concerned the essential distinction between the justifiable and the unjustifiable, while at the same time it has given food for reflection that will enable the thoughtful better to appreciate the real significance of the term "dangerous."

"Dangerous" is a word that is liable to serious misuse. Many commonplace occupations in life are dangerous to the uninitiated. A man who had never ridden a horse would find it dangerous to tackle a five-barred gate. Those who can hardly swim find it dangerous to go out of their depth in the water. It is dangerous for the unpractised climber to attempt special feats in the Alps.

All these things and many more are dangerous to the point of having a possible death-penalty for failure, yet it would be absurd to argue that, therefore, they are unjustified.

It is the same in flying. In proportion to the skill of the pilot, so do the risks of flight diminish. But the development of that skill, the acquisition of which may afterwards often mean the saving of life, is itself risky. The dexterity that enables a good flyer to land safely in the one small vacant patch of an impossible environment that might be the death of a clumsy hand in a similar emergency, must be acquired somehow.

The simple *vol plané* had its terror at one time, and not a few pilots gained their first experience of making a gliding descent through the necessity of having to do so by the accidental stopping of the engine. Others may have waited until, embued with the excitement of the moment, they have done with joy that which in cold blood they have contemplated with less than a feeling of pleasure. It is thus that sport of all kinds has progressed, and it is thus that flying in particular has made such wonderful strides. Who, for example, could suppose for a moment that it was for the sake of a thousand pounds that Latham failed twice to cross the Channel?

Everyone who attempts a dangerous task to which he is unaccustomed, takes a special risk, but it is his own look out. If he succeeds, he has the experience of the occasion to give him confidence in a future attempt. The confidence itself breeds success, and the repetition of the manœuvre quickly gives to the pilot a skill that reduces its danger for him. For him only, however, and not for others who are less skilful. His ability may inspire others to emulate him, as, for example, did the then amazing mastery of the air displayed by Wilbur Wright in France during 1908 and 1909. The influence of Wilbur Wright then did an immense amount to

quicken the development of other pilots, who formerly had hardly been able to do more than hop.

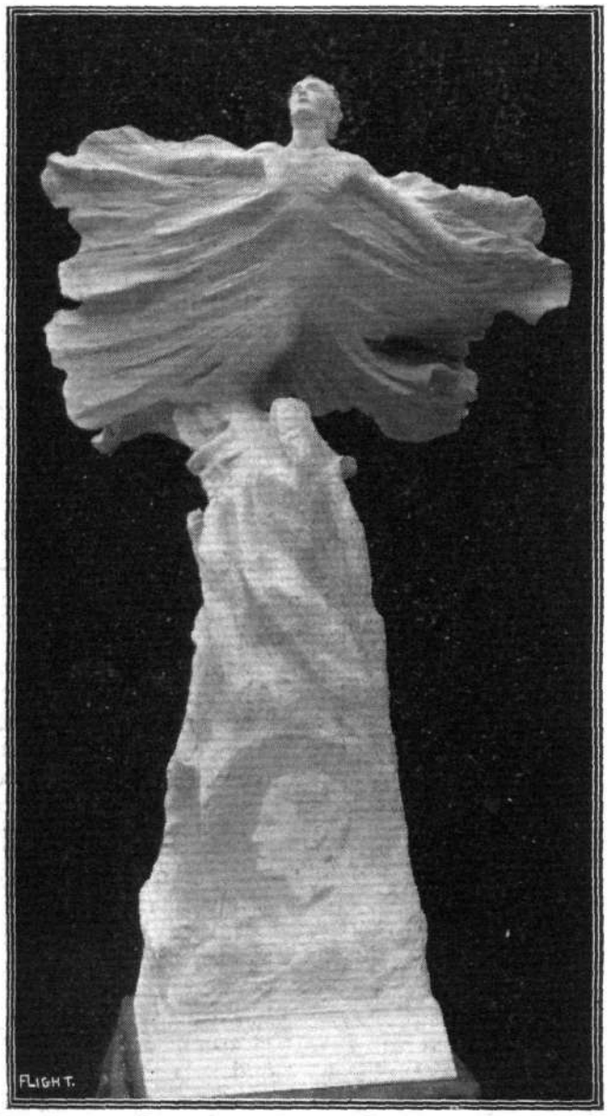
It is for pilots themselves to appreciate the risks they run, and not to let enthusiasm close their eyes to the realisation of fact. An aeroplane flies in accordance with the laws of nature, and those laws cannot be transgressed with impunity. There are certain things that cannot be done, and failure in an attempt to practise the impossible cannot be condoned with sympathy, save perhaps of the kind that commiserates ignorance. The work of aviation science in general, and the investigations of the Accidents Committee in particular, are directed towards the extension of useful knowledge, and those who despise useful knowledge are fools.

One of the things that has come under general criticism as undeniably dangerous is the practice of flying at very low altitudes. There is no doubt that this is especially dangerous as compared with other sorts of flying, because if anything goes wrong there is no headroom wherein to recover control of the machine before striking the ground. On the other hand, the practice of low flying is not necessarily unjustifiable on that account. It has been recognised that for military purposes it may sometimes be of great value to fly low across country in order to take advantage of such natural cover as may exist. It cannot, therefore, be said off-hand that a very skilled pilot has no *primâ facie* justification for practising such a mode of flight, dangerous though it undoubtedly is.

But when flying that is especially dangerous is practised, it behoves the pilot to be *especially* careful to select his place and occasion in such a manner as to avoid endangering others besides himself. It is not essential to the practice of low altitude manœuvring, for example, that any pilot should use the sheds of an aerodrome as realistic obstacles, any more than it is essential for the beginner to try and make a perfectly straightforward flight above the heads of the spectators in the public enclosure.

The point at issue is not particular to flying, but it is a broad question, common to all forms of danger to which the community are subjected. There is no useful purpose to be served by flying above crowds that is commensurate with the probably terrible consequences of a serious mishap. Under certain circumstances the likelihood of a mishap might be infinitesimally small, but there are other circumstances in which it may be exceedingly great. And it is solely because of this latter that it behoves those in authority to set their face sternly against the practice altogether.

It is the especial purpose of the Royal Aero Club to set a lead in this matter, as it has done, because flying, in common with other sports, is primarily left to the jurisdiction of the people who are interested, and so long as they govern themselves properly and evince a proper respect for the rights of other sections of the community who are not so intimately interested, there is no need for any interference from higher quarters. The Royal Aero Club has rendered it quite clear in its report that it in no way seeks to damp the ardour of enthusiasts who may be willing to take the greater risks of progressively difficult practice, but it has always prohibited dangerous flying in places and under circumstances where the consequences of failure are especially liable to cause injury to others.



The Latham Trophy, by Georges Dubois, which is to be competed for at Ferte-Vidamee on July 12th, 13th and 14th next. The same competitor winning this trophy three times running will hold it for all time.

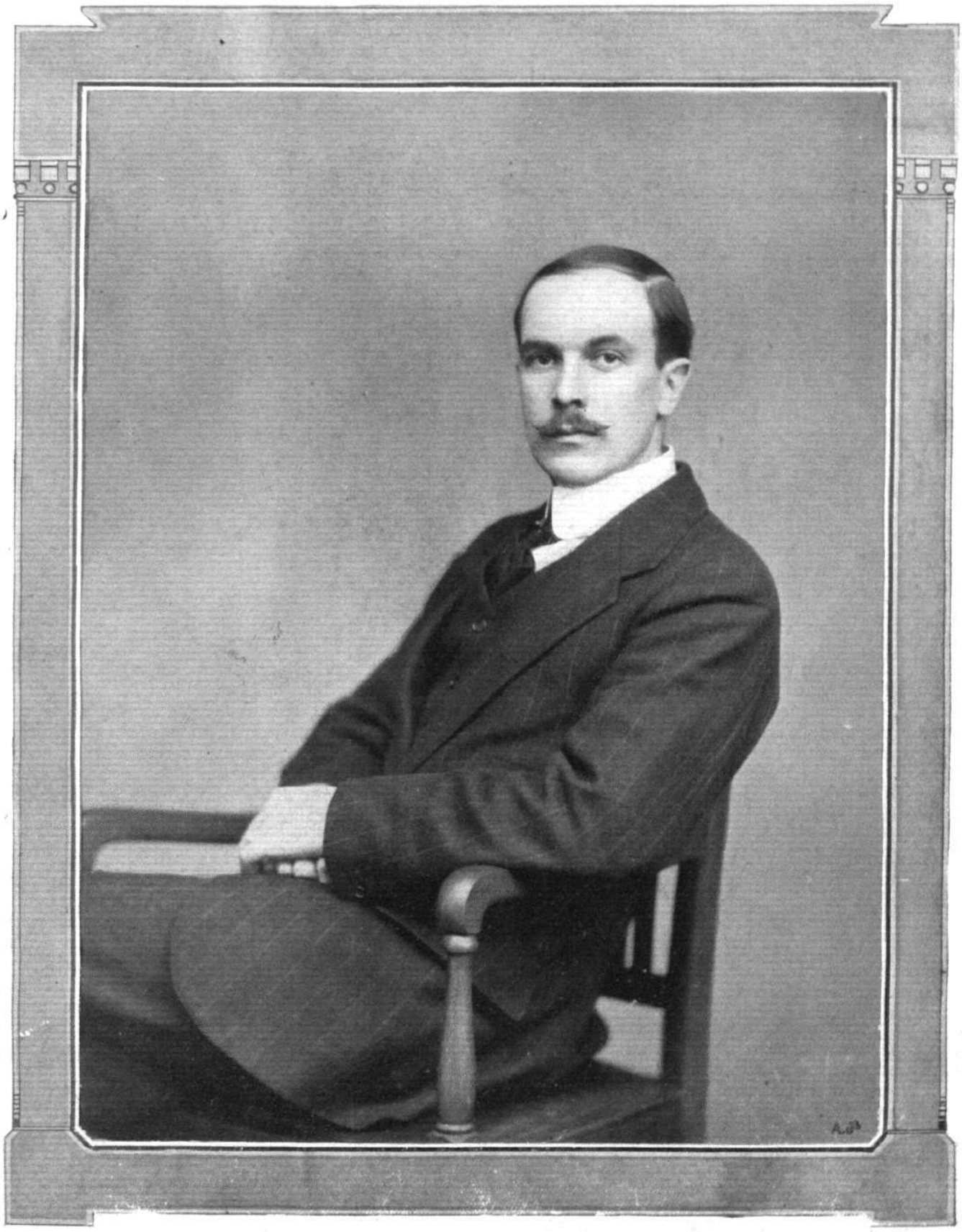
With this point of view we are wholly in accord, and we have taken the present opportunity of enlarging upon the matter because there is undoubtedly considerable confusion of thought on this subject. The various aerodromes have supported the attitude of the Aero Club in discountenancing flying above the enclosures, but it is not always evident that the pilots themselves show an equal loyalty to the spirit underlying the restriction. Feeling themselves to be secure, they only do that which they conceive to be safe, and what they know, moreover the crowd in a large part enjoys. All the same, the fact remains that there is a sort of flying that is "not done" by the self-respecting man, and it would be well if there were a nicer sense of appreciation of this distinction among a few whose influence in the right direction would be invaluable.

Reverting once more to the Report, there emerges incidentally, in respect to this accident, that it was in no way due to any fault in the machine, and we can only again express very sincere regret that Messrs. Martin and Handasyde should have had a very valuable aircraft wrecked under such circumstances: it was in every way an undeserved misfortune.

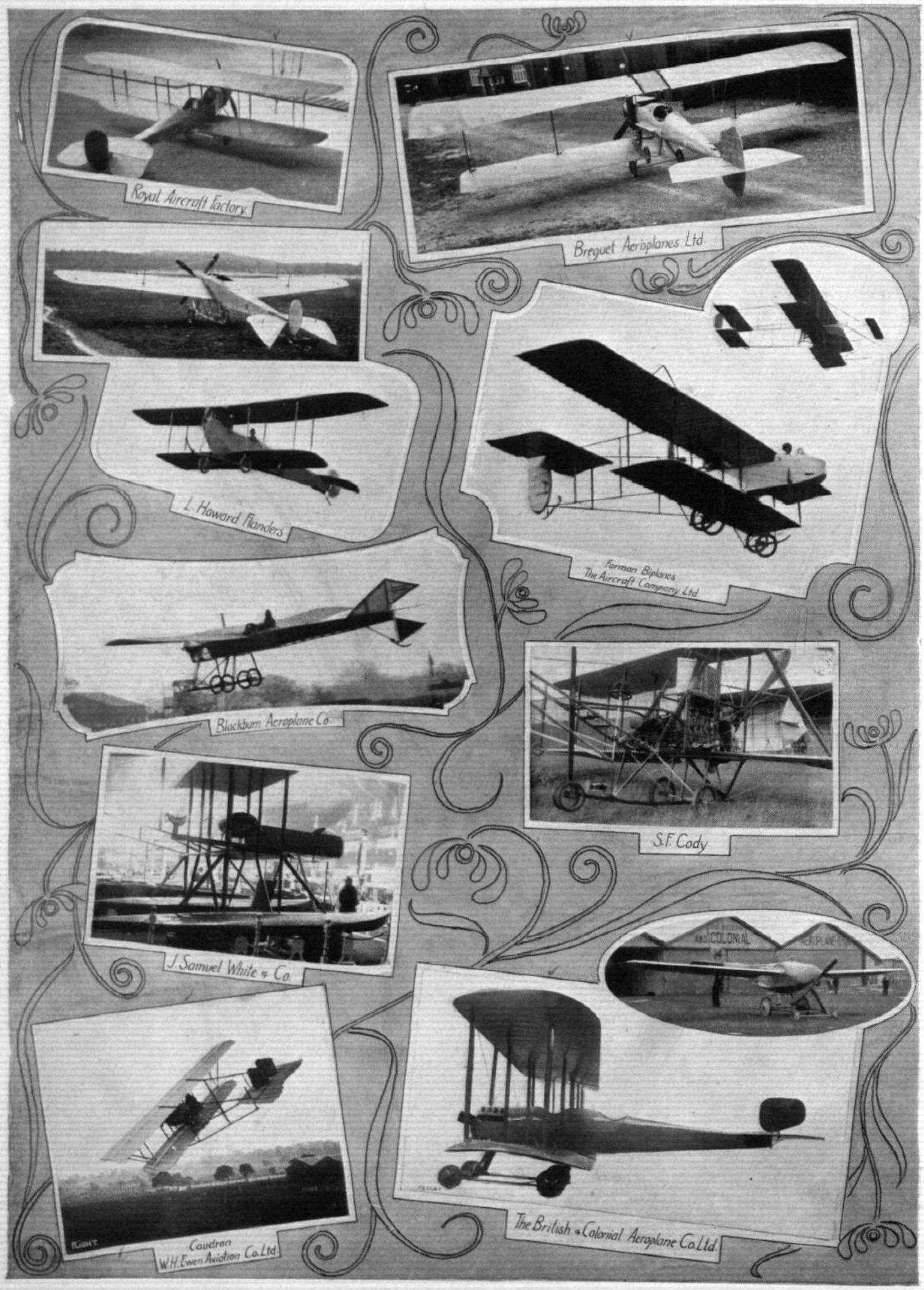
FLIGHT

MEN OF MOMENT IN THE WORLD OF FLIGHT.

British Pilots.



C. HOWARD PIXTON.



Some British-built aircraft.

Some more British-built aircraft.

PARIS TO LONDON.

EVER since man started to place another element under his subjection by flying and thus conquering the air, it has been one great struggle for mastery, and many a fierce fight has been waged, man sometimes securing the victory, and occasionally having to admit defeat. As time creeps on, however, we are gradually becoming more assured that, as the principles of flight are better understood, man will conquer here, with all reasonable safety, as he has previously conquered the earth and the sea. In writing this article, illustrative of the flight of Robert Slack from Paris to London on the Wednesday of last week on a Morane-Saulnier monoplane, I have in my mind more the showing of how man will win through against fearful odds, than the belittling of any previous Channel flight, of which there have been many, every one of which, in this comparatively early history of flight, deserves to be writ in letters of gold on the scroll of honour, commencing with that memorable flight of Blériot himself, which, under the conditions then prevailing as to the efficiency of machines, was probably the most wonderful.

Slack went over to Villacoublay to fly the Morane-Saulnier to Hendon, which, knowing Slack, meant that he would arrive, somehow.

On Wednesday, Aerial Fête Day, I was at the Aerodrome at Hendon, when our friend, the megaphone man, announced that Slack had left Folkestone at 10.15, and might be expected to arrive at Hendon during the morning. The wind at this time was blowing half a gale from the north-west, dead against anyone coming to Hendon from the direction of Folkestone, and when I heard the announcement, I said to Capt. Tyrer, who happened to be standing near, "He will surely come down, he couldn't get here against this wind." His reply was, "Bobby won't come down, he'll get here, don't bother." And he did. Before long, we saw him in the distance, buffeted about like a cork in a rough sea, and in a very short time he was safe and sound in the aerodrome, very dirty, very deaf, and very happy.

Slack arrived at Villacoublay on the Monday, but his machine was still in the hands of the constructors; as a matter of fact, it was not finished till late on Tuesday afternoon, when Slack made a trial flight, and decided to set out soon after daybreak on Wednesday morning.

The morning broke wet and stormy, and gave promise of anything but a flying day, but towards five o'clock the rain ceased, and Slack decided to start. A few minutes after five and he was on the wing. He had travelled but a very few miles when once more the rain started, and came down in torrents, and continued to do so all the way to Cape Gris Nez. So bad was the rain, and so low were the clouds, that he saw practically nothing of France as he passed over it, having to fly by the compass all the time, and was out over the Channel without knowing it; in fact his first glimpse of the water was when he was within a mile or so of the English coast, when, whilst flying at a height of about 3,000 ft., he saw through a break in the clouds the waters of the Channel, with the town of Folkestone right ahead. A few minutes previously he had commenced what was really under the circumstances a fight for life.

"Flight" Copyright

Mr. Robert Slack, who brought the Paris *Daily Mails* from Paris to Hendon last week.

"Flight" Copyright.

Mr. Robert Slack arriving at the London Aerodrome on the Morane-Saulnier after his magnificent flight from Paris.

"Flight" Copyright.

PARIS TO LONDON FLIGHT.—Mr. Robert Slack being escorted across the aerodrome immediately after his arrival at Hendon, by Capt. Tyrer and Mr. R. T. Gates.

"Flight" Copyright.

Gilbert just taking his seat in the Morane-Saulnier monoplane, ready for his start back to Paris on Sunday last.

On the top of the forward tank, and out of reach of the pilot, is a small glass inspection cap, through which the petrol can be seen when being pumped under pressure from the reserve tank into the main one. This cup was evidently cracked when he started, and during the voyage had lost a piece out of the front, and the rush of wind getting in had turned the cup round in its seating till the broken part faced the pilot. It had become necessary when a few miles from Folkestone to pump petrol into the forward tank, which was now nearly empty.

Slack pumped for his life, but the result was that most of the petrol came out through the broken glass and was blown back into his face, very little indeed going in to feed the engine. I have never had the experience of being drenched with petrol myself, but Slack tells me it is not nice and that he was nearly blinded in spite of his goggles, and eventually nearly suffocated owing to the evaporation of the spirit, and at last the worst happened. The engine stopped.

Up to this time Slack had not seen the sea, and had not much idea as to his whereabouts, and it was at this moment Fate was kind and allowed him to see that he was nearing Folkestone, as he slid down the wind.

When a pilot is over a strange town and his engine has stopped "for keeps," he has not much time to waste in finding somewhere to land, and makes for the first piece of green he can see, which in this case was not very large but looked all right from above. Closer inspection, however, showed that it was not ideal. The ground sloped downwards, and had a ridge in the middle like the roof of a house, and parallel to the direction of flight, which meant that he would either have to land downhill on the edge of a slope, or turn round and land uphill with the wind. By this time he was very near the the ground and without power, but judged he had just time to make a sharp turn, which he did, and landed without mishap, the machine coming to rest just before topping the ridge, at 8.40. Three hours and forty minutes to cover roughly 170 miles. A plucky flight. Here he had to send for some more petrol and some tape to bind up the broken glass with, and at 10.15 he was once more off, having got out of a small field without the help of skilled mechanics to give him a start.

From Folkestone the course was direct to Kempton Park, where an almost right-angle turn would have to be made for Hendon. The rain had now commenced again, and it was so misty that at a height of only 1,000 feet it was not possible to see the earth. As flying even so low as that had no advantage, Slack decided to get higher, out of danger, and once more trust to his compass. After flying for about two hours, with occasional dives to try and get a nearer sight of Mother Earth, he decided that he must have overshot the mark, and came down to ascertain his whereabouts, to find that he was still some twelve miles short of Kempton, though flying in the right direction. In two hours he had only covered 65 miles, although the machine can fly 80 miles an hour; such was the strength of the wind.

Here he bought some more petrol, and after a stop of about thirty minutes—meanwhile it having left off raining—set out once more for Hendon, where he arrived at 1.41 p.m., having been actually in the air for 6 hrs. 36 mins. to fly about 260 miles. Bravo, Slack! a very fine flight!

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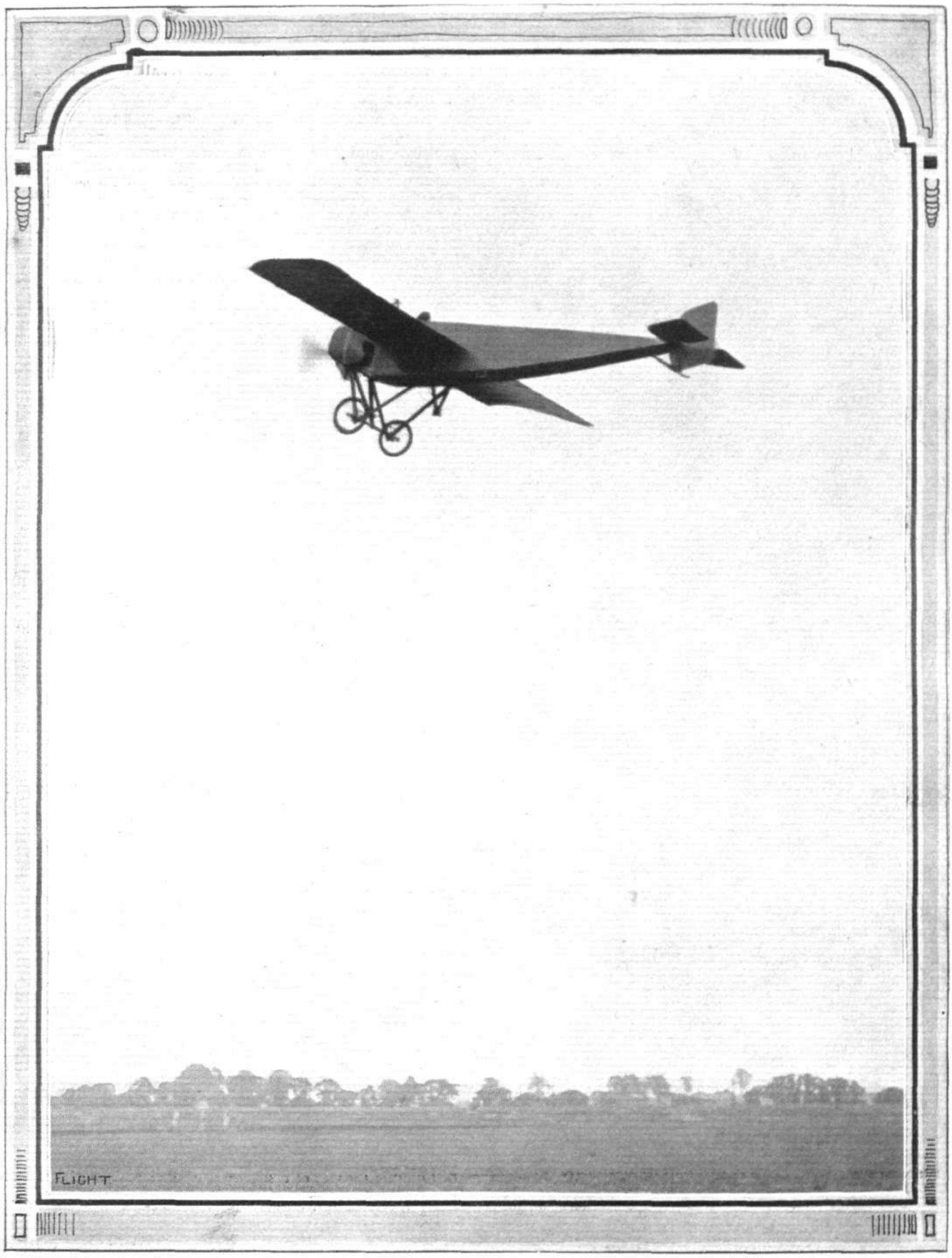
The Rheims Meeting and G.B. Race.

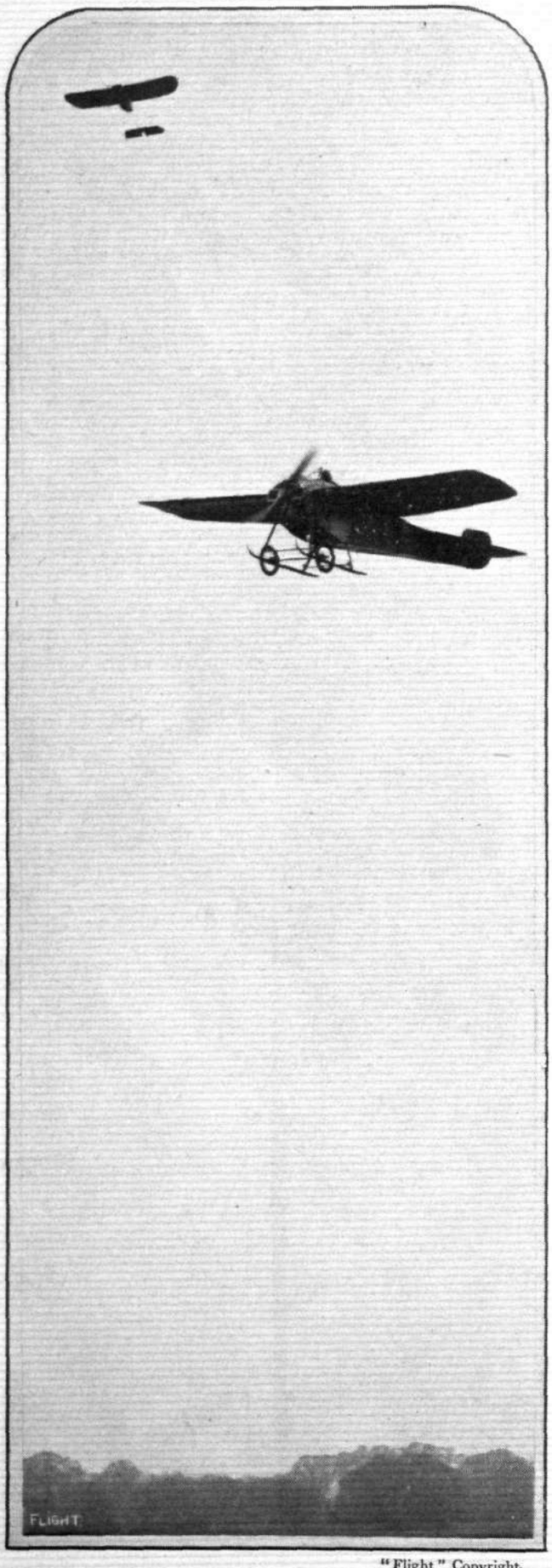
THE Aero Club of France is organising a three days' meeting to be held at Rheims, on September 27th, 28th, and 29th, the last day being given up to the competition for the Gordon-Bennett race. It will be remembered that M. Deperdussin some time ago placed his extensive aerodrome at Betheny at the disposal of the Club for the race, and also offered 100,000 francs for prizes and to pay expenses. On the 27th September, the French eliminating trials for the Gordon-Bennett race will be held, while the second day's programme will he made up of three events. These include (1) A slow-speed contest in which the winner will be the pilot who makes the lowest speed, which must not exceed 65 k.p.h. (2) a speed range competition in which those taking part must qualify by covering 20 kiloms. in a closed circuit, at a speed of at least 100 k.p.h., and then the winner will be the machine which subsequently covers the course at the slowest speed. (3) a cross-country race of 150 kiloms. over a 30 kiloms. circuit, the competitors having to make a landing on each round. The prizes will total 15,000 francs on the first day, 50,000 francs on the second, and 25,000 on the third.

A Resignation by R.E.P.

FINDING so many calls on his time, M. R. Esnault Pelterie has been compelled to resign the position of Chairman of the Aviation Committee of the Aero Club of France. M. Soreau, who was formerly chairman, will act in that capacity until the next election in October. M. Paul Tissandier has been elected vice-chairman of the committee.



Mr. Robert Slack flying the Morane-Saulnier at Hendon after his flight from Paris last week.



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A Hanriot monoplane arriving at Hendon from Brooklands to take part in a competition while one of its future competitors—a Blériot—is in the air.

THE LEISURED AVIATOR.

By SYDNEY PICKLES.

As I ruminate over the doings of the past fortnight or so, I am certainly forced to the conclusion that flying nowadays is busy work. At any rate the period in question has been busy enough for me, and certainly not without interest withal. A few Saturdays ago, on June 14th to be precise, I flew for my superior certificate. This involved a preliminary test at Hendon, after which I left for Brighton about noon.

Steering for Brooklands, I soon came over the aerodrome, and there made a glide from 2,000 feet to within 20 feet of the track, round which I flew one circuit and thereupon re-ascended for a continuation of the journey to Brighton *via* Leatherhead.

At one period of the flight I entered a thick bank of fog and came down to about 800 feet, where I found the air currents exceedingly strong and difficult, and, familiar as I am with my trusty Caudron, the going at this part of the journey was far from simple.

Beyond the hills, however, the fog disappeared, and I was able to get up to 2,000 ft. again. Somehow or other I must have mistaken the railway track, for I came down at Littlehampton by mistake, and so had to re-ascend and fly along the coast to Shoreham, where I met with a very hospitable reception and an excellent lunch.

After lunch I flew down to Brighton, and appeared to amuse the holiday crowd considerably by a little low flying between the piers. I did not stop at Brighton for any length of time, however, but started almost immediately for Hendon.

The return flight was in the teeth of a head wind, but although slow by comparison with the outward journey, it was entirely uneventful, except that just as I got over the sheds I found that I had run short of lubricating oil, and therefore had to make a somewhat hurried descent.

Having filled up, and still feeling very fresh, I thought it would be a good idea to fly in the second heat of the speed handicap that was just about to start. This event I won, but in the final Brock beat me. However, I had no reason to be dissatisfied with the day's doings.

On the following Tuesday I went down to the Isle of Grain, to put a new Caudron through its tests for the Admiralty. It was the first time I had ever flown a waterplane of any description, but I found no particular difficulty about it, and was confident enough to take up one of the officers as a passenger and subsequently to give my mother her first flight, which she enjoyed immensely. She thus has, I believe, the distinction of being the first Australian lady to fly in a waterplane.

On Saturday, the 21st, I went up to Dundee to give a flight in my Blériot, and altogether had rather a poor time. The ground was small and rough, as are so many of these temporary aerodromes over which one is invited to disport oneself in flight. The wind was strong, and there were many obstacles. In themselves these things are not necessarily serious. It is only when one's engine gives trouble that they assume alarming proportions, and as bad luck would have it my engine must needs give trouble on this particular occasion.

The point at which it chose to fail was whilst I was flying in a bee-line towards a chimney, which ordinarily I should have cleared with any amount of room to spare. Instead, the machine sank, struck the chimney, and fell—with me inside it—from a height of 30 ft. Feeling the machine falling, I let go the control and gripped the seat firmly to avoid being thrown out. The machine turned over on its side, and assumed what in a "stunt" flight would be called a vertical bank. On this occasion there was no other word for it except disaster, and I must admit I thought my chances seemed exceedingly small.

The crash came, and I picked myself up undamaged. Not only was I uninjured, but I was free from so much as a scratch. The machine, needless to say, was fairly much of a wreck.

Having seen the remains of it packed up I took the night train to London, for I had an appointment in France at Crotoy on the Monday, and must needs travel on Sunday to get there.

Accordingly, I caught the 9 o'clock boat train from town, where I had made another appointment to meet a friend who was coming over with me in order to fly back as a passenger on a new Caudron of which I was taking delivery. My friend turned up with the news that he was unable to come, which disappointed me considerably, as I disliked the idea of a solitary journey to France followed by a solo flight back again.

My friend was accompanied by a companion, to whom, in no very hopeful spirit, I transferred the invitation at precisely four minutes prior to the time the train was due to start. He had never so much as been in an aeroplane in his life, but he was a sportsman all right; and having thought about it once-and-a-quarter times, he rushed off to the ticket-office, and returned just in time comfortably to take his seat in the train with me as we steamed out of the station.

When we got to Crotoy on Monday morning, the new Caudron

waterplane was ready and waiting on the beach. I took it up to 2,000 ft. for a preliminary canter, and flew around a little in order to satisfy myself that there was nothing amiss. At five minutes past five in the afternoon I set out from Crotoy with my passenger, and flying along the French coast to Cape Grisnez, which I reached at 6.40, I steered an easterly course across the Channel. Owing to haziness of the atmosphere I did not see land again until five minutes past seven. At eight o'clock I reached the English coast, still flying against a stiff wind.

Arriving at Margate, I alighted for fresh fuel supplies, and after restarting, I flew over to the Isle of Grain, which I reached about nine o'clock in the evening.

The journey was interesting to us both, but without incident that calls for any comment. It was flown, I may mention, without a map of any description, and it was my first flight across the Channel.

On the Wednesday following I put the machine through its Admiralty tests, and incidentally made a flight with Lieut. Boyce to the Eastchurch aerodrome, where we landed, and after lunch flew back again to the water. Such is the advantage of an amphibious machine like this.

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MY FIRST FLIGHT.

BY A PASSENGER WHO FLEW 175 MILES AND CROSSED THE CHANNEL IN HIS FIRST JOURNEY.

To be invited four minutes before the departure of a Continental express to be the companion of a passenger whom one has come to see off is possibly not in itself such an unusual occurrence: to accept on the spot and board the train forthwith is, however, less of a commonplace incident, being, in fact, more closely related to the conventional episodes of some thrilling novel than to the prosaic course of real life.

Such, however, was the queer turn of the wheel which Fate had in store for me on a memorable Sunday morning two weeks ago. I went down to Charing Cross with a friend in order to meet Sydney Pickles, who was due to start for Crotoy, where he was to obtain a new Caudron waterplane with which he purposed flying back to England. My friend was to have been Pickles' companion on the voyage, but at the last moment was unable to go. My own interest in the matter, up to precisely four minutes to 9 a.m., was the purely passive one of a third party at a leave-taking of two.

Coming events, they say, cast their shadows before them, but it must have been a very ethereal shadow that was cast across my path that day, for it prepared me not one whit for the suddenness of the mental disturbance into which I was thrown when I found myself suddenly being invited to be Pickles' companion in lieu of my friend.

It was preposterous, of course, quite out of the question, in fact, that one could be expected to board the boat train at a mere beckoning, as one might clamber on board a passing 'bus.

But that was not how it appealed to me; the idea that gripped my mind as in a vice was centred upon one thought only—the forthcoming flight. I had never been in an aeroplane in my life, and here was a chance such as might never come again in my whole existence. It was not a mere "once round the aerodrome" circuit that was being offered me, but a real flight with a pilot who is, as I understand it, recognised as one of the best in England.

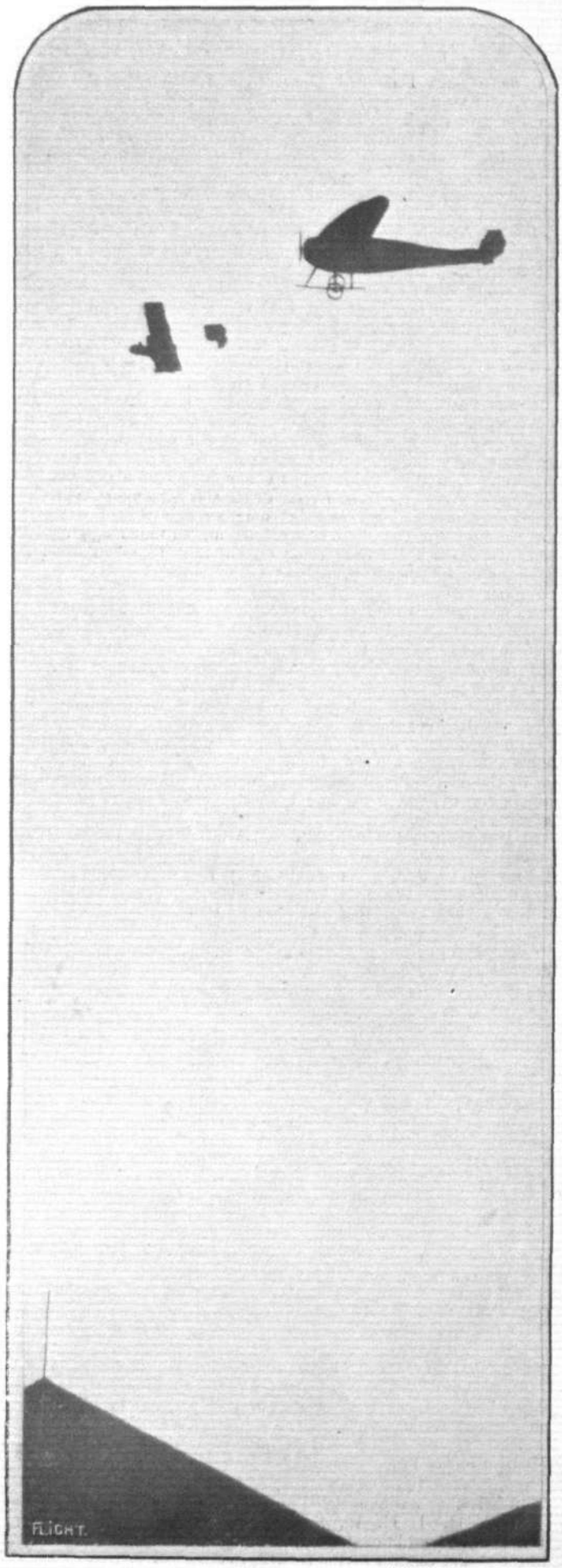
The fact that Crotoy is not exactly a suburb of London, that I had no travelling conveniences, that I should be away for more than an hour or so, in fact every one of those things that ordinarily would array themselves as insurmountable barriers to the spontaneous accomplishment of a suddenly conceived idea of this order, diminished their perspective until they seemed as nothing at all.

There was, indeed, little time in which to argue, and no time at all in which the seeds of objection could properly take root—far less put forth shoots and bloom—in a mind that already was the stronghold of another great desire. If I thought twice, it was the same way both times. In the one remaining minute of the time available I did that which, strictly speaking, was unnecessary—I went to the booking-office, and bought a ticket.

And so, before I had well had time to come to the full realisation of the consequences of my action, I was already far from London, rushing smoothly over the metals in the boat express. But for the pleasant reality of the presence of Pickles, "always merry and bright," I might have fancied myself in a dream, out of which subsequently I should awake from some grotesque parody of a journey by air.

But it was no dream on the Channel, I can assure you, and anon in France it was no dream making the final stages of the journey to Crotoy, where we arrived on the Monday morning.

During the forenoon Pickles spent some of his time making a thorough inspection of the machine and putting it through a trial



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Not a swallow chasing a fly, but the Handley Page and a Henry Farman over the sheds at Hendon.

flight, but after lunch and the arrival of a telegram from England, it was decided to get under way, and preparations for the journey were commenced forthwith.

At five o'clock I donned overcoats, and such wraps as I could secure, and very gingerly accommodated myself in the seat of the Caudron "'bus." Then Pickles got aboard, and proceeded to start the engine from a handle, for all the world like a motor car. Waving "good bye" to our hosts, we moved across the sands, and started the flight at exactly five minutes past the hour.

Rising gently as we flew along the coast, we gradually climbed higher and higher until the ground lay 3,000 ft. below. It was glorious. At this height the country was one vast picture map. Still following the coast line we forged steadily through the air, and 55 mins. from the time of starting had reached Boulogne.

My word, it was cold up there. I had arranged with Pickles to write a log of the flight, but I shivered so much that I could scarcely hold the pencil. Noticing this, Pickles switched off for a glide to warmer levels. But it was only for a little while, for very soon we were fighting our way full speed through the wind again, and the shivering fits came on worse than ever.

It was horrible, there was no doubt about that. All the grandeur, all the glory of flying got frozen out of my soul by this beastly cold that I could neither control nor endure. My mind, my heart, were filled with one insatiable desire for a change of situation. And then suddenly, as I thought I had about reached the limit of my power to suffer such excessive discomfort, a change came over my feelings, and in some strange way I suddenly realised that the sensation that caused me so much agony a few moments ago was not only bearable, but that I looked upon its indefinite continuance as something still within reason.

And so we flew on against the wind to Cape Gris Nez, the name of which Pickles yelled at me through the hurricane draught as a reminder that, shivers or no, I must keep my log. Thence we headed out to sea, and I left behind with the land a heartfelt wish that we had alighted, if only for a moment or two, to ease the strain on my cramped, cold shivering body and limbs.

The idea of the non-stop flight was strong in the mind of the pilot, and he kept going. Clouds loomed thick ahead, and there was no sight of the coast. A steamer came into view on the water below and remained in sight for a minute or two ere it was blotted out by the mist. Presently Pickles switched off, and glided down from 4,000 ft., where we had been flying, to 2000 ft., where he switched on again.

In the distance I noticed a little black ball in the water, which, on closer inspection, turned out to be a fishing boat. There was still no sign of land, and the old feeling of unendurable discomfort returned to me. It seemed years since we started, and the memory of the French coast line had almost faded out of the sense of reality, so long did it seem since we had left it behind.

Occasionally, I noticed the machine would rock quite a lot, and then fly steadily again for a while, until it had another spasm. Ordinarily, I should have been much interested in the performance, and possibly a little alarmed. But, under the present circumstances, I think I was willing to accept anything that fate might ordain, were it only a change.

At seven o'clock in the evening, signs of land ahead were still absent; but, looking backwards, I could dimly discern the outline of France. Three minutes later, however, a tap on the back from Pickles caused me to strain my eyes against the blast. There, in the distance, I could just make out a narrow, dark excrescence on the horizon—the first glimpse of the shores of home.

Two steamers and a lightship that presently came into view gave an air of civilisation to the otherwise deserted space, and cheered my drooping spirits immensely. I rubbed my hands together with renewed vigour, so that I might hold the pencil with better effect, but it was a sorry business.

Keeping Dover well to the left, we made for the mouth of the Thames, and by 8 o'clock we came up with the coast line and followed it round to Margate. About this time, too, Pickles was beginning to get particularly interested in his petrol gauge, and as I obstructed the view in my normal position, I found myself once or twice summarily pushed out of the light.

At Margate, Pickles switched off and alighted on the sea alongside the pier, where the machine rocked about like a row-boat on the swell. From a passing motor boat Pickles, acting for the nonce as a gymnast balancing on one of the floats, secured an anchor and length of rope, with which he proceeded to effect a mooring, whilst the party in the motor boat very kindly went to fetch some petrol from the shore.

In an incredible short space of time we were surrounded by all manner of craft, at which Pickles lustily shouted injunctions against trespassing too close. More than curiosity, however, prompted the approach of the coastguard, to whom he shouted particulars from my log. Having satisfied him that we were just and proper people to enter England, and having filled up with petrol and oil, we once more ascended into the air, after considerable preliminary bumping over the rough surface of the water.

Dusk was now falling, for it was 8.43 when we passed Herne Bay pier. Presently came Sheerness, a prettier sight from above than below, with the lights of the town and the steamers, and the flashing buoys, making a scintillating picture. Suddenly three searchlights shot their beams across the water, and passing over a little bay, Pickles switched off, and made a smooth landing in the Medway precisely at 9 o'clock.

For me it was a memorable flight that thus finished, and not while I live shall I ever forget it. It does not fall to the lot of many people to make their first trip in an aeroplane on a journey of about 175 miles, with a Channel-crossing into the bargain. It was Pickles' first Channel-crossing, too; and although I am in no way competent to give praise for piloting, I must say I was amazed at the way in which he kept to his pre-arranged route. Much of the time at Crotoy, Pickles spent with M. Caudron, drawing maps on the sand, and the course that he selected in that manner he adhered to throughout.

W.R.M.O.

ROYAL FLYING CORPS (MILITARY WING).

OFFICIAL summary of work for week ending June 27th :—

No. 1 (Airship) Squadron. Farnborough.—The "Beta" was out every day, carrying out instructional and reconnaissance flights. On the 20th the Prince of Wales paid a visit to the sheds, and was taken up for half an hour's cruise in "Beta" by Major Maitland. On the 25th and 27th she was out at night observing the movements of the 1st Divisional Artillery. The Kiting Detachment carried out a considerable amount of observation work at Lydd during the week.

No. 2 Squadron. Montrose.—On the 19th, 20th and 23rd all the pilots were up on B.E.'s and M. Farmans. Three more non-commissioned officers are receiving instruction in flying. The weather as a whole was bad throughout the week.

No. 3 Squadron. Netheravon.—Practice and reconnaissance flights were made by all the pilots on the 24th, 25th, 26th and 27th. "C" flight, who are at Lydd, were busy carrying out observation of artillery fire.

No. 4 Squadron. Netheravon.—On the 20th, 21st, 23rd, 24th, 25th and 26th most of the pilots were out. Capt. Shephard flew a Canton-Unne B.E. over from Farnborough in a nasty wind on Tuesday evening.

The Flying Depôt.—Experimental work was continued on Maurice Farman machines.

THE ROYAL FLYING CORPS.

THE following was announced by the Admiralty on the 26th ult. :—

Sub-Lieut. I. H. W. S. Dalrymple-Clark, R.N.R., to the "President," additional, as probationary sub-lieut. for course of instruction at Central Flying School, to date July 1st.

The following was announced by the Admiralty on the 28th ult. :—

Lieut. E. T. R. Chambers, to the "Hermes," additional, for flying course, after the manœuvres, undated.

The following was announced by the Admiralty on the 30th ult. :—

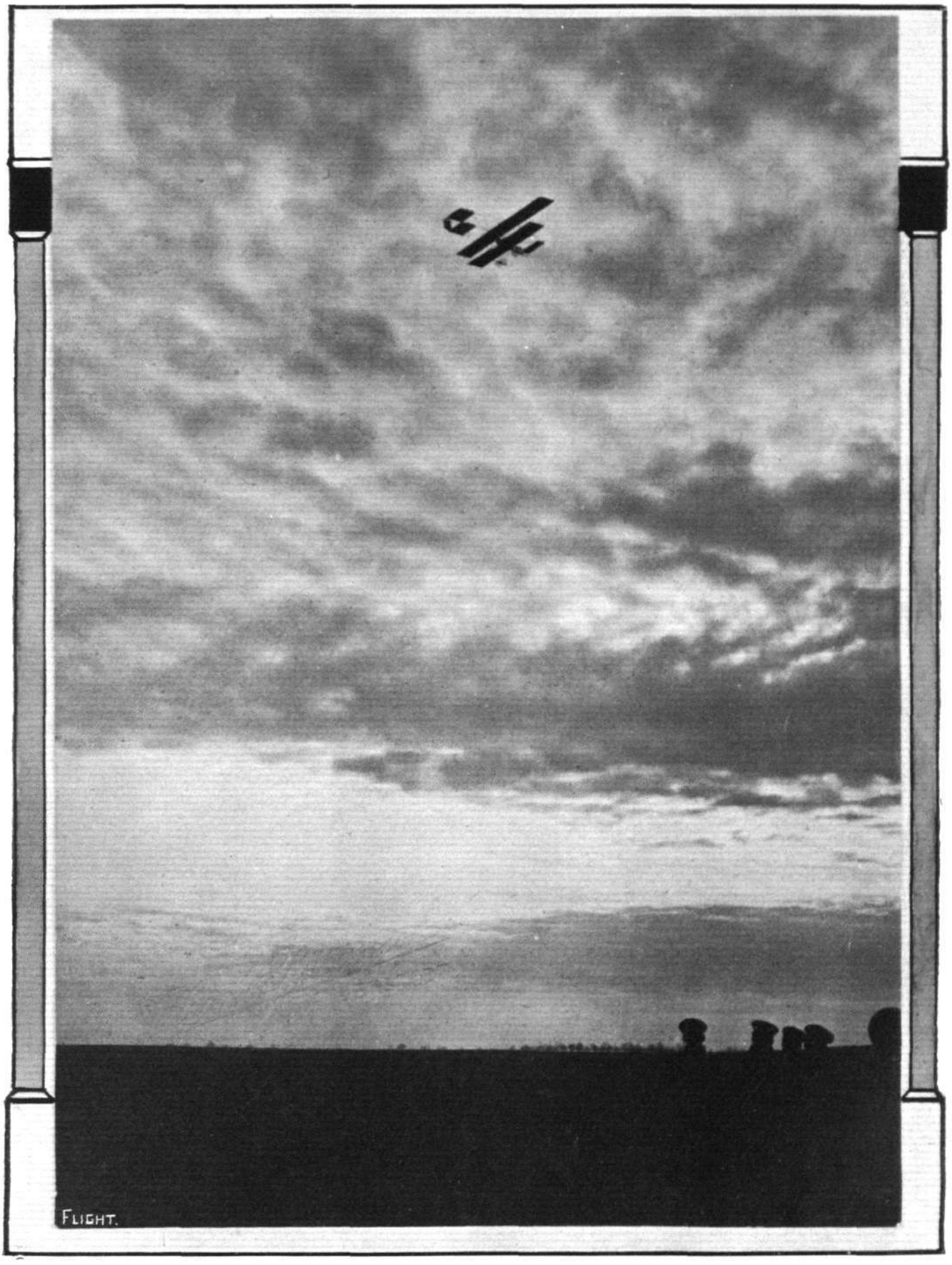
Sub-Lieut. R. E. C. Peirse, R.N.R., to the "President," additional, as probationary sub-lieut., for course of instruction at Central Flying School, to date July 1st.

EXTENSIONS AT THE N.P.L.

ON Thursday of last week the Rt. Hon. A. J. Balfour opened the new buildings at the National Physical Laboratory, and incidentally delivered an extremely fine address on the importance of the national encouragement of scientific research. Although intended as generalities, many of Mr. Balfour's remarks might have had a special reference to aeronautics, for applied to that branch of science his words seemed so exceedingly true.

Among the new buildings, and, in fact, it was the building in which the opening ceremony was performed, is one that will house the 7 ft. wind-tunnel, with which it is hoped to extend the experiments on the lift and resistance of wings. It is quite evident that the demands upon the aeronautics staff of the N.P.L. are such as to call for the use of several wind-tunnels. Recently, for example, they have started upon a research into the problem of stability, and it is evidently highly desirable that one wind-tunnel should be reserved exclusively to this work.

The method of making these experiments is to mount the model on a spindle in the middle of the wind-channel, and to measure the forces that act on the model in all directions. This is accomplished by means of a special balance that has been designed and constructed at the laboratory, and is an exceedingly interesting piece of apparatus. In addition to measuring the lift and the resistance, it also measures the rotary forces, or couples acting about the various axes. Thus the model can be investigated to determine the effect of rolling, pitching and yawing, and the inter-relationship of these movements.



AT EVENTIDE.—A Bristol in Germany under the pilotage of Mr. Pixton.

THE HOME OF THE "SEAGULL."

"COME down to Osea Island and see the 'Seagull,'" said Mr. Santoni to me a few weeks ago, and the invitation was no sooner extended than it was accepted. I might explain that although much has been learnt in the past from studying the ways of the gull, this particular visit had no connection with bird life, its purpose being to see that fine water-plane which was so much in evidence on the stand of the British Deperdussin Co. at the February Aero Show at Olympia. Having accepted the invitation, it was immediately arranged that the visit should take place on the following Sunday, and it may not be uninteresting to readers of FLIGHT if I set down some of the incidents that befel us on that memorable trip.

On Sundays there is only one train goes that way, and it leaves Liverpool Street at eight-twenty-five ante, change at Witham for Maldon East, where on arriving the fun commences. Outside the station were a number of "flys." Why in the world they were ever so called we could not make out. (I have looked it up in the dictionary since and find "Fly: to shun, to avoid," so perhaps there is something in a name after all.) Certainly they are far remote from flying, though we had to take one to get there. The great trouble we had was to make a choice, but shutting our eyes we picked out one that had been—in about the mid-Victorian era—called a victoria. There really wasn't much wrong with it, provided one was easily pleased. A victoria was originally designed (good word) to accommodate three, including the driver. We were three inside and an equal number on the box, including the little daughter of our coachman, who was a lady "coachman." The footboard of the box had all disappeared except one small board, and as the child promptly went to sleep, our "coachman's" time was equally divided between trying to slip in the top gear when the horse wasn't looking, and preventing her offspring from slipping through the place where the floor ought to have been. That horse, by-the-bye, must have had a slipping clutch, judging by the way he took the hills. A three-mile drive, without exceeding the speed limit, got us safely to Millbeach, a village of two houses, one of which is an inn, where, as the tide was up, we had to wait for the motor launch to come from the island, about three miles away, to fetch us. When the tide is out it is no good waiting for the launch because there is no water, and the only way to get to the island is to walk or drive across a primitive causeway—the hard—staked out with seaweed covered posts in the bed of the creek, which, incidentally, is dangerous to undertake once the tide has turned, for it comes in with extraordinary rapidity, and flowing round the island attacks from both sides.

"Flight" Copyright.

A canine fisher.

While waiting for our craft, we were much amused at the antics of a dog that is an expert at fishing. This sagacious canine will creep along the shore "speering" for plaice or soles, and having located one he springs in and catches it with almost unerring aim. We saw him catch two nice-sized fish in less than ten minutes, and I managed to secure a snap of him on his second attempt just as he lifted his head out of the water.

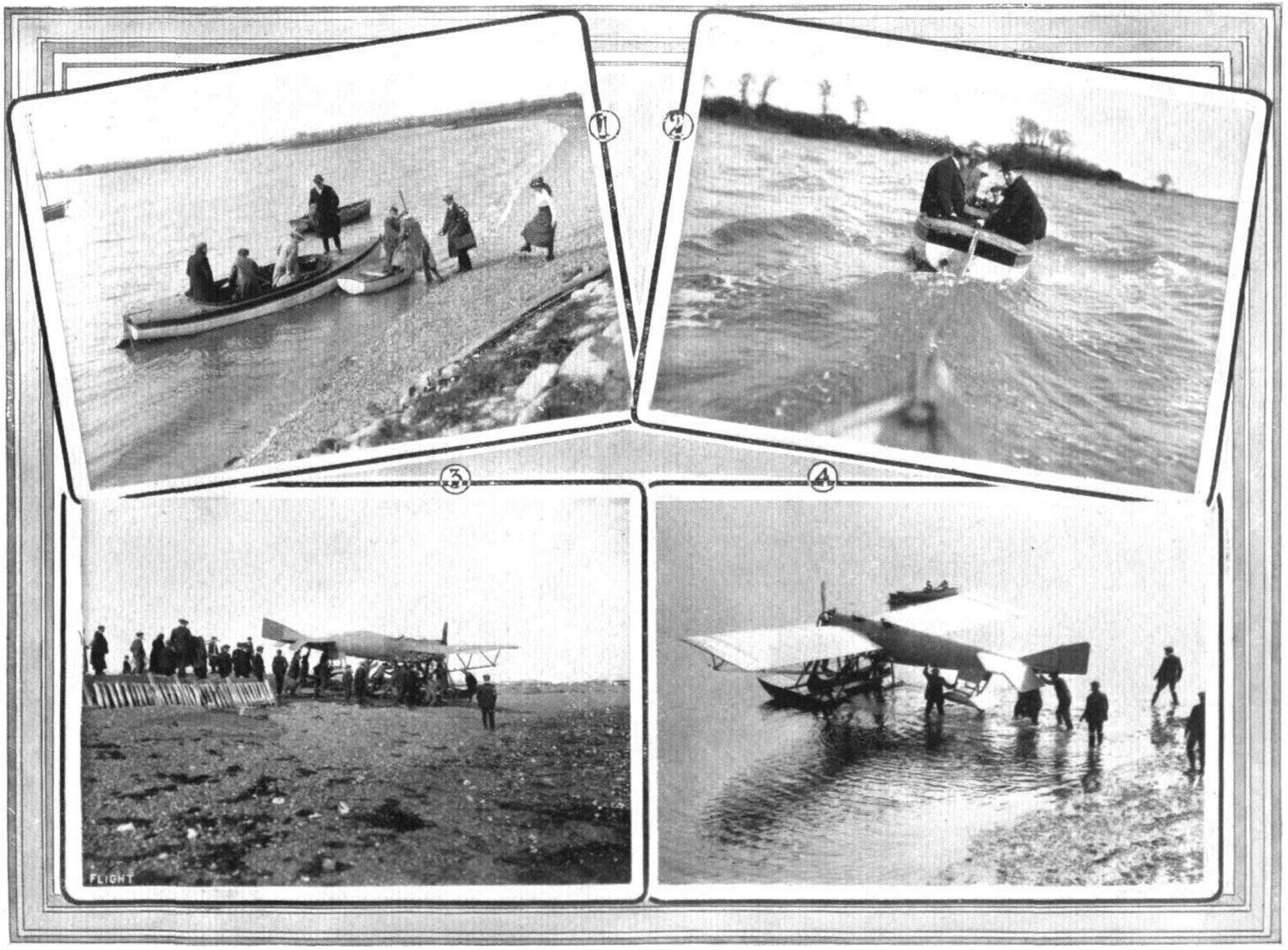
Climbing into the launch was quite exciting, as owing to the sloping shore one could not get close up, and one had first to step into a dinghy about the size of a cocked hat, and from that into the launch. As we were rather a large family, I had the pleasure of being towed behind in this cockle-shell, and as the wind was against the tide, with the help of the propeller they made things lively for me. However, from my position I was able to get a photograph of my tug, showing her churning away with Lieut. Porte guiding her destinies. On arriving at the island we found the mechanics busy fitting various little things to the waterplane, which is one of the most business-like jobs I have seen. It is no joke, however, if any special thing is wanted on Osea Island. By way of example: During the morning it was found necessary to send the motor launch to Heybridge, about four miles away, to fetch a small piece of steel from the local blacksmith. For me it was not so bad, as it enabled me to have another trip, this time not in the dinghy. Arrived at Heybridge we left the launch out in the tideway in charge of Mr. H. M. Brock—the plucky Hendon pilot who recently flew the baby Dep. from Hendon to Brooklands in a fifty-mile wind—and made for the shore in the dinghy. Having secured our cockleshell to a ring in the sloping wall, we started out to find the blacksmith, who we discovered, not under the proverbial spreading chestnut tree, but in his little weather-board cottage, surrounded by his hives of industry in the shape of various workshops. For this blacksmith is not of the common or garden variety. He, like those of his brotherhood, shoes horses and puts on cart-wheel tyres, but he does not stop there. Far from it. In addition he is a boat-builder, a fitter of ships' and yachts' cabins, a constructor of portable houses, anything, in fact, from a hangar to a dog-kennel. Above all, he is the resident chief electrician of his own electric light generating plant, which, originally erected to supply his own workshops, has since been extended to light the houses of his fellow villagers. Having obtained what we wanted, on arriving back at the place where we had left the water, we found it had all run out and left our dinghy harging by the nose half-way up the wall, and no water within yards of her. Being so small, however, we simply lifted our craft off the wall and my companion carried her in his arms, like a child, to the edge of the stream, and so back to the launch, where we found friend Brock supremely contented, stretched restfully out in the sun. The water had by this time run out as though somebody had made a hole in the bottom of the creek, and it was a race against time to get back to the island before we got left high and dry on the mud. Our engine was of 12 h.p., and having such a tide we slipped along pretty fast, our "crew" sounding the depth every few minutes with the boat-hook. It seemed most strange to be out on a stretch of water nearly two miles wide, and be able to touch bottom at 3 ft. or thereabouts. Half-way back we had only a little over 2 ft., and I began to wonder what it would be like to be stuck on the mud for twelve hours, and at the same time it came to my mind that there was only one solitary train back to London, and that at 7.14. However, we just managed to get back to the island with our screw stirring up the mud. Shortly afterwards the "Seagull" was wheeled by many willing hands down to the deep channel on the south side, where there is always plenty of water, and got afloat.

A waterplane on land has always struck me as being somewhat of an ugly duckling, with its big floats which raise it so far from the ground, but on the water I think a more graceful object it would be hard to find, and this one has a particularly pleasing appearance, looking for all the world like a huge grey swan.

With Lieut. Porte in the pilot's seat, the 100 h.p. Anzani was cranked up, and away she skimmed with seemingly a human sense of pride and joy at being in her native element.

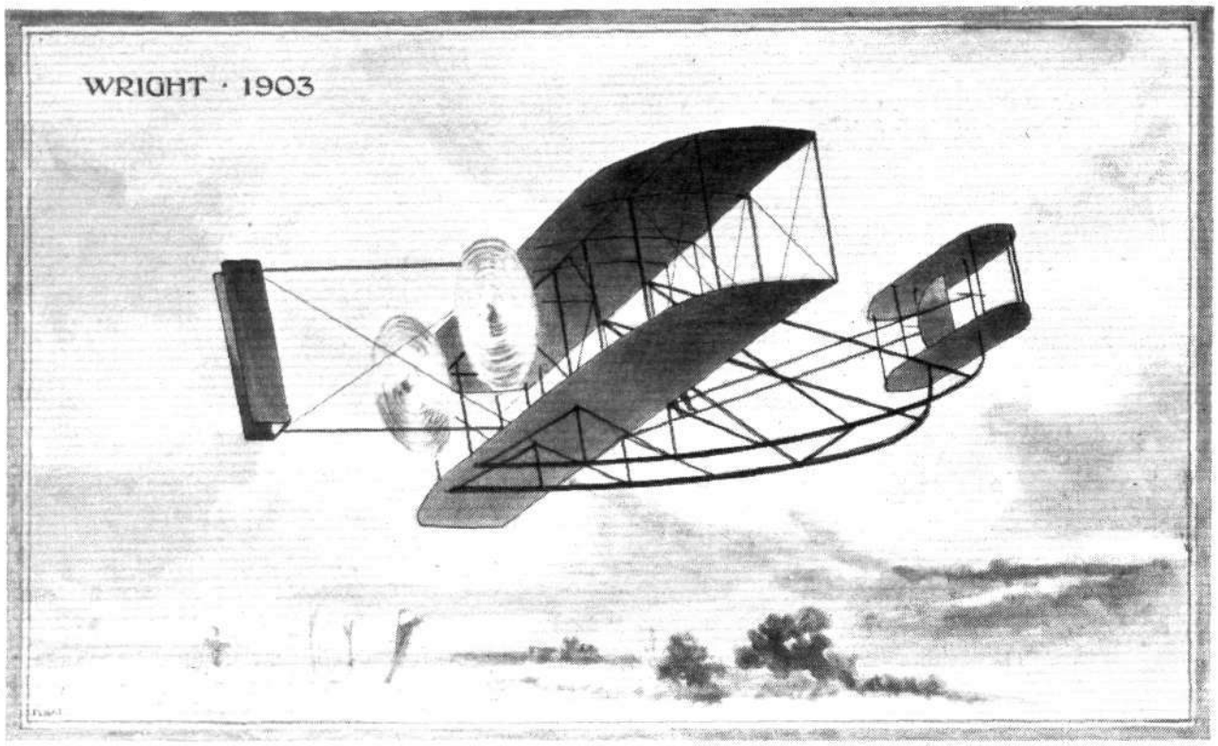
Unfortunately, time and the Great Eastern Railway wait for no man, and we had to be content with a few trips, especially as we wanted to walk back over the ground, or, rather, mud, to Millbeach, just to see what it was like to tramp in the bed of the sea, like Pharaoh of old. At Millbeach we were picked up by our friend the antediluvian chariot and whirled back, at some ghastly speed nearing 3 to 4 m.p.h., to Maldon East. A change again at Witham, with a one-stop run to Liverpool Street, and we were back in the hub of the universe, after a most enjoyable day.

H.E.S.



1. Getting aboard for Osea Island. 2. In tow. 3. All hands down the beach. 4. Launching the "Seagull."

THE PIONEERS.



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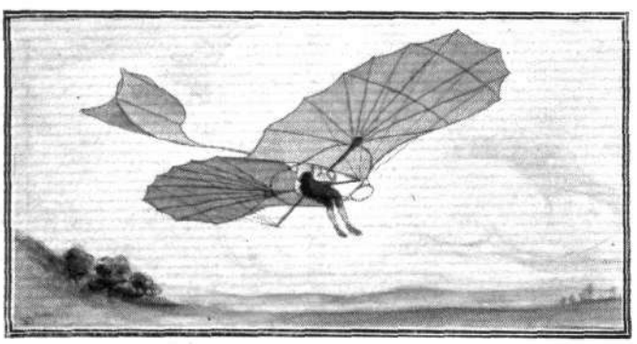
Sketch from a photograph of an early Wright biplane.—The Wrights built their first successful power-driven machine in 1903, and first flew on December 17th of that year. By the end of 1905 they had flown several single journeys exceeding 20 miles in length.

THIS is the tenth anniversary of the conquest of the air by the aeroplane, and it is appropriate that our special number should be made to commemorate the work of the pioneers, as well as other incidental facts, such as, for example, that FLIGHT itself is already in its fifth year of publication.

It was on December 17th, 1903, that the Wrights first achieved power-driven flight with their aeroplane (the first account of which in any English newspaper appeared in FLIGHT's parent journal—the AUTO.), and prior to that day no man could claim properly to have flown at all. The most important work preceding this accomplishment of the Wrights was, unquestionably, the gliding experiments practised by themselves and by others, commencing with Lilienthal.

With Lilienthal's introduction of the glider the practical side of the art of aviation assumed its first real existence Otto Lilienthal



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Lilienthal's glider, one of a series built in Germany between 1890 and 1896. With the introduction of these machines real practice in the art of flying first commenced.

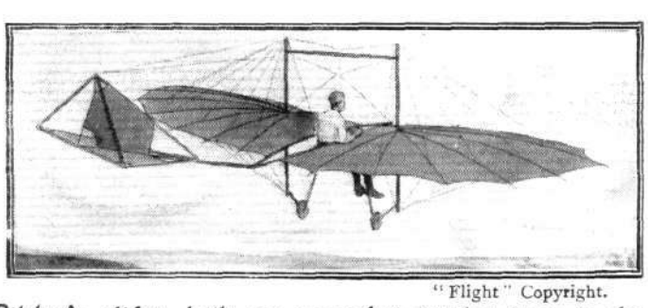
was born at Anclam, in Pomerania, in 1848, and he died in 1896 as the result of a fall during one of his flights. His first work of note was the publication of a book entitled "Bird Flight as a Basis of Aviation," which has since been translated into English, and constitutes one of the classics that should find a place in the library of every student of flight.

In 1891, having come to the conclusion that it was possible to gain some practical experience in the air, in spite of the absence of any suitable engine—provided the experimenter could arrange to fly downhill under the propelling force of gravity—Lilienthal constructed a machine that he purposed using as an aerial toboggan.

His glider consisted of a pair of rigid outstretched wings measuring 23 ft. in span, and having, after various alterations, an area of 86 sq. ft. The wings were cambered, and they were surfaced with cotton twill stretched over a light framework of willow. The machine weighed only 40 lbs. complete.

In order to balance the glider in flight, Lilienthal relied upon his own dexterity in moving his body to and fro or from side to side whenever it was necessary to counteract a shifting of the centre of pressure under the wings. There can be no doubt that the use of his apparatus was fraught with considerable danger, but Lilienthal brought an immense enthusiasm to his work, which was not only an encouragement for himself, but a source of inspiration to others.

Among those who took great interest in Lilienthal's experiments was Pilcher, then a young English engineer whose name was associated with the firm of Wilson and Pilcher, at one time well known in



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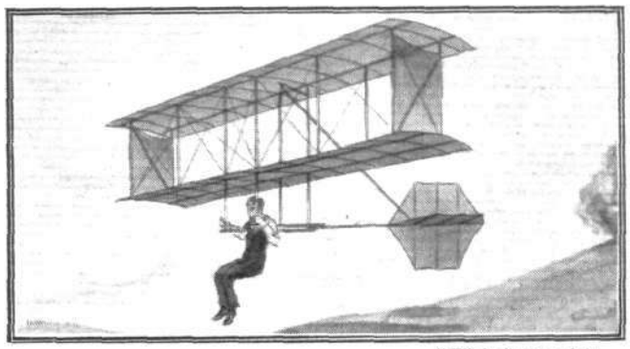
Pilcher's glider, built on somewhat similar lines to the Lilienthal machine, but having among other differences a light-wheeled undercarriage in order to relieve the pilot of its weight when landing and while on the ground.

the automobile industry before their cars were taken over by Messrs. Armstrong, Whitworth. He designed gliders of his own, more or less on Lilienthal lines, and at one time went over to Germany in order to discuss the subject with Lilienthal himself. If anything, he adopted an even more dangerous procedure than the German pioneer, for in order to avoid the necessity of finding a suitable hill as an aerodrome, he would attain the initial altitude necessary for a gliding flight by having his machine towed like a kite. An accident during

one of these experiments resu ted in his death, and thereby deprived England of a most promising student who, had he lived, might have done much to give this country pre-eminence from the first.

Instead, it was in America that the influence of Lilienthal's work took permanent root. Octave Chanute, a distinguished American



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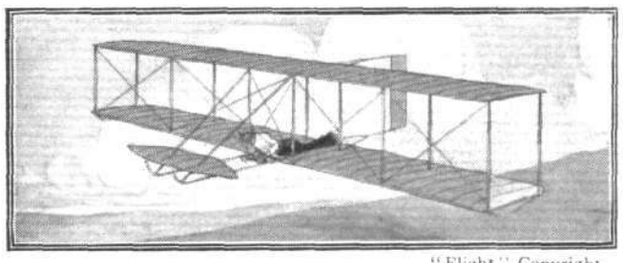
Chanute's glider, piloted by A. M. Herring.—This machine was the prototype of the modern biplane. It was built in America about 1896, and tried on the shores of Lake Michigan near St. Joseph.

engineer, but already an old man, was intensely interested in the prospect of flight, and extended his practical patronage to the early movement by financing an important series of experiments in which the central figure was the well-known pilot, A. M. Herring.

It was while reading the simple notice of Lilienthal's fatal accident that Wilbur Wright received his inspiration to study this branch of practical science, and from the first he obtained the whole-hearted co-operation of his brother, Orville. The story of their work has been told too often to need repeating. Lilienthal died in 1896, and thereupon the Wrights commenced their studies. They built their first glider in 1900; it was a biplane, constructed on the trussed-bridge principle introduced by Chanute, but it differed from the Chanute machine in several important respects. Among other things, it embodied the famous wing-warping control, and the pilot, being thereby relieved of the necessity for balancing the aeroplane by gymnastic exercise, was able to lie prone on the lower plane, and so reduce the resistance of his body to a minimum.

For three years the Wright brothers' experiments continued, sometimes in the open and sometimes in the laboratory. The longest



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Sketch from a photograph of a Wright glider in flight.—The first of these machines was built in 1900, and it had wing warping control. When first used the vertical rear plane was fixed, but later it became a pivoted rudder, and on the power-driven aeroplane was arranged for convenient simultaneous control with the warp.

glide that they made at any time measured 622½ ft., and lasted 26 secs. The amount of time that they actually put in at this work was extraordinary: in a good season they were able to make between 700 and 1,000 flights, and once they made more than 375 flights in less than a week.

When at last they had brought their gliding experiments to such a pitch of perfection that they could not very well hope to gain much more experience along these lines, they decided to take the next and most important step of all, which was to build an engine-driven machine that would make them independent of the winds and of the contour of the ground.

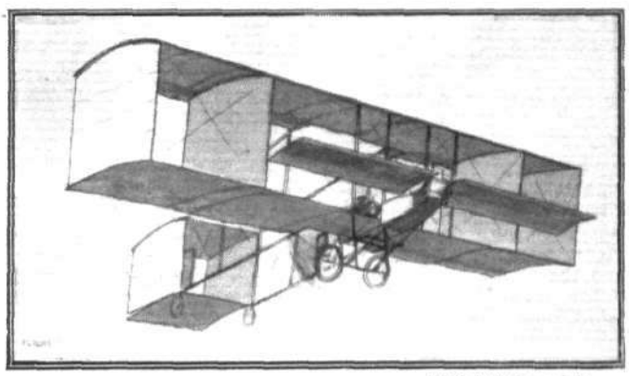
Their chief difficulty was to find an engine. Although automobiles were already in fashion, and the high speed petrol engine had thus become the obvious type of prime mover to use, they were unable to find any motor suitable for their purpose on the market. Very characteristically, therefore, they set to work to design and construct one in their own workshops, and with this engine they equipped their new and larger aeroplane.

So carefully and so systematically had they worked throughout that the culminating success of their endeavours came almost as a matter of course. On December 23rd, 1903, they succeeded in making four free flights, rising from level ground against the wind. In the following year many more successful flights were accomplished, and by the end of 1905 they had flown journeys exceeding 20 miles in length and lasting over half an hour in duration. By this time also they had so far improved the control of their machine that they felt justified in introducing it to the public. For the time being, therefore, they ceased their experiments in order that they might devote their time to laying the foundations of a commercial enterprise.

Very few people either appreciated or really realised what the Wright brothers had done, for they invited no publicity and most of their achievements were, in fact, unseen. It was, therefore, in France during the year 1907 that the new art first publicly attracted the notice of the man in the street.

Henry Farman and Leon Delagrange were the central figures of this period in the history of aviation, and it is curious, but none the less a fact, that no one at that time gave much thought or credit to the Voisin brothers who had designed and constructed the machines that these pilots were using.

Gabriel Voisin was in fact one of the earliest experimenters in aviation, and some of his most exciting experiences were concerned



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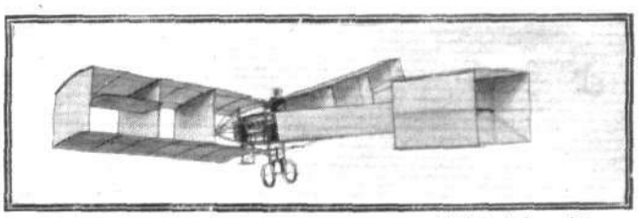
The Voisin biplane with which Henry Farman won the Deutsch-Archdeacon prize of 50,000 francs on January 13th, 1908, by being the first to fly, under official observation, a circular course of 1 kilom. in length.

with the flying of a glider as a kite while it was being towed by a fast motor boat over the Seine.

It was at this earlier period, too, that the names of Archdeacon, Blériot, Santos Dumont, and Esnault Pelterie were first prominent, but this progress was spasmodic in the extreme, mainly because everyone found an exceeding great difficulty in selecting a suitable place for full-scale research. It was one thing to be interested in the idea of flying, but quite another to find anywhere that one could safely attempt to practise the art of flight.

Santos Dumont, always an enthusiast for new things, and at that time still enamoured of the small dirigible, built an aeroplane of the tail-first type, with which he succeeded in winning the first flight prize for a glorified jump exceeding 25 metres, which he performed on October 23rd, 1906.

As we have remarked, however, serious public interest was not really aroused until 1907, when Delagrange and Farman acquired their machines from Messrs. Voisin, who had established the first



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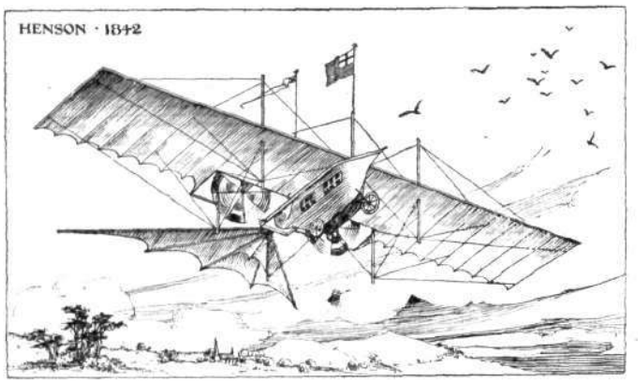
Santos Dumont's tail-first biplane, with which he won the first flight prize on October 23rd, 1906, by flying a distance exceeding 25 metres.

aeroplane factory on the outskirts of Paris. Permission had been obtained from the authorities by Henry Farman to practise on the parade ground at Issy, and it was apparent from the first that aviation was about to enter upon a new era.

France has ever justified herself as a great society of encourage-

ment, for new arts have seldom lacked the enthusiastic patronage of the rich in that country. In aviation there had already been established, through the generosity of MM. Deutsch and Archdeacon, a prize of 50,000 francs for whosoever should first complete a circular flight of 1 kilometre in length ; nothing could well have been better suited to encourage progress. The conditions were simple and straightforward, yet they comprised a crucial test. It was apparent that the mere ability to keep the machine off the



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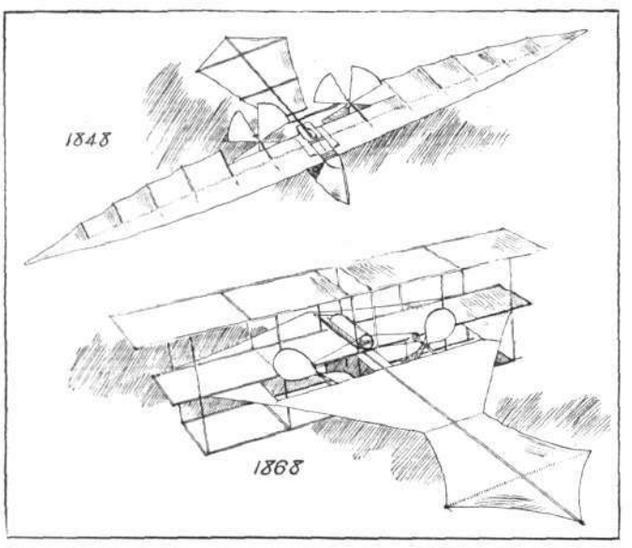
Henson's idea of a monoplane about 1842, as commonly depicted in old prints of that date.

ground for a period while it wended its way more or less in a straight line, did not constitute flying. In order to fly properly, one must be able to turn, and it was while turning that the machine was most potent to cause trouble.

Henry Farman won this Deutsch-Archdeacon prize, which was called the Grand Prix de l'Aviation, on January 13th, 1908. On October 31st of that year, he flew across country from Chalons to Rheims, a distance of 27 kilometres.

Wilbur Wright came to France in the autumn of 1908, and it was then that his accomplishments were first recognised by the world at



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The Stringfellow models.—The monoplane was built in 1848 by Stringfellow after collaboration with Henson, and was the first self-propelled aeroplane of any kind to support itself by its own power. The triplane was built in 1868 by Stringfellow, and was demonstrated at the Crystal Palace Exhibition in that year. It was subsequently bought by Prof. Langley, and is now in the Smithsonian Museum at Washington, D.C. The monoplane is in the Victoria and Albert Museum, London.

large. Of his flying on that occasion the French press could not find words of too great praise, and as one of the foremost of the French experimenters then remarked, compared with the ability of Wilbur Wright the pilots in France simply did not exist.

From the end of 1903 to the end of 1908 was a period of five years ; from the beginning of 1909 to the present time is a period of another five years, not quite completed. To look back over this period, and to realise the enormous strides that have been made, is to bring before the mind what is, surely, one of the greatest achievements that man has ever wrought. Five years ago the number of people who had so much as been on an aeroplane might almost have been counted on the fingers of the hand ; to-day, the number of qualified and experienced pilots is altogether beyond count.

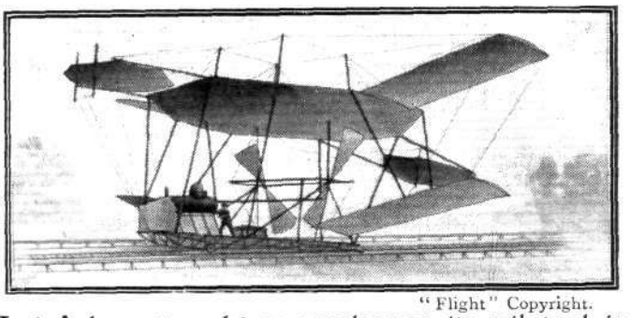
The practice of aviation, which then was a curious hobby, limited to a few enthusiasts, who were doubtless regarded by most people as a little peculiar, has now become a recognised profession. An art, which then was to be seen only in one place, has now spread over the face of the globe. That which formerly was regarded as an interest of cranks, has now become the serious concern of governments.

In five short years these things have come to pass, yet it was many a long day before the combination of circumstances that alone enabled a proper start to be made was brought about.

The idea of flying has been latent in the mind of man through countless ages. It preceded the conception of the motor car, of the railway, perhaps even of the wheel itself, for were not birds always in the air to foster the idea of aviation in the brain of man?

The earliest authentic sketches of any flying apparatus were made in the fifteenth century by that versatile Italian, Leonardo da Vinci. They related, very naturally, to a flapping wing device, for it must be remembered that whosoever conceived flight to be possible in those days, necessarily also believed it to be an accomplishment within the muscular ability of the human frame.

Flight by man's muscular energy alone is impossible even with the most economical machinery that could be devised, but, in the



"Flight" Copyright.

Maxim's large steam-driven aeroplane on its rail track in Baldwin's Park, Kent. During a trial in 1893 it broke through the top guard rail and made a short free flight.

absence of any alternative power, pioneer students had no other alternative than to think differently in this matter, or to give up the study altogether.

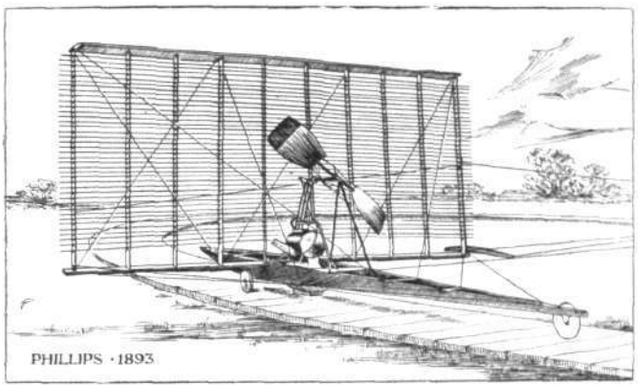
When the steam engine came into existence it appeared to put a different complexion on the matter, or so Sir George Cayley thought, who was at pains to show that a practical flying machine was within the realms of possibility over a century ago. Sir George Cayley, then the head of a well-known Yorkshire family, constituted himself the father of the science of aerodynamics by the remarkable articles that he contributed to *Nicholson's Journal* in 1809.

His conception of the fundamental principles of flight was lucid to a degree, and his practical appreciation of the requirements of an aeroplane led him to forecast most of the features that characterise the modern machine. He recognised the probable advantage of using a cambered wing as against a flat plate, and of the necessity for an elevator as well as a rudder. It is on record that Sir George Cayley built an aeroplane, but it is unknown whether he ever ordered an engine for it. In Yorkshire there is still a tradition that one of Sir George Cayley's servants broke his leg while experimenting with the motorless machine as a glider. It does not appear, however, that Sir George Cayley appreciated what might be accomplished by the practice of gliding in the mode that was employed by Lilienthal.

Sir George Cayley's influence was considerable, and undoubtedly coloured the work of many who came after him. Those who next appear in chronological sequence among historical pioneers were Henson and Stringfellow, both sometime residents of Chard, in Somersetshire. They worked together on the building of large models, which they tried to make fly by means of small and very ingeniously constructed steam-engines. Ultimately Stringfellow succeeded in producing a monoplane which was self-supporting by the aid of its own power plant, and with this he made a public demonstration in 1848. It was the first time that any sort of aeroplane had ever been built to sustain itself aerodynamically, but the significance of the accomplishment was apparently quite unrecognised by those who witnessed the demonstration at that time. On the other hand, there is a curious old print of the same date that depicts with the liveliest

imagination a monoplane on its way to China or some other similarly far-distant locality.

It is impossible to mention all the names of those who have contributed useful work as pioneers in the realm of flight, and far less is it possible to do justice to the more important efforts. It is sufficiently clear, however, that for a long period the science of aviation had its most serious students in England. The Aeronautical Society was founded in 1866, and the first paper that was read before its members was an extremely interesting and also a very important contribution by F. H. Wenham. Sir Hiram Maxim, as all the world knows, had very ambitious ideas about what an aeroplane should be, and he built an enormous machine with which he experimented on a rail track laid down in Baldwin's Park, Kent, in 1893. The machine was fitted with a steam engine of his own design and construction, and on one occasion the lift of the planes was sufficient to cause the machine to break through its guard rail and perform a short free flight.



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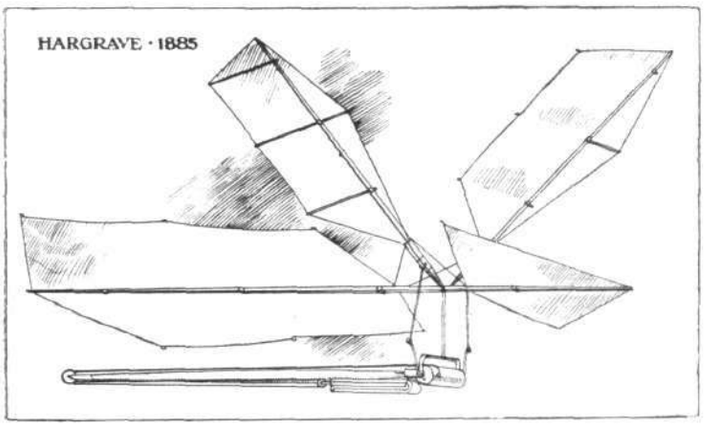
Phillips' aeroplane tested on a circular track at Harrow in 1893.—The supporting surface was divided into numerous lath-like cambered planes, arranged somewhat in the manner of a Venetian blind.

Another interesting series of experiments was carried out about the same date at Harrow, on a circular track, by Phillips. The machine in question had numerous very thin cambered planes arranged somewhat in the appearance of a Venetian blind. Phillips' name, however, is more generally associated with his experiments on cambered sections, and in particular with a peculiar form of section having a pronounced hump over the front edge, which is sometimes referred to as the "Phillips entry."

A pioneer who is perhaps not so well remembered as he should be is Hargrave, who is, of course, famous as the inventor of the box kite, but whose researches in aviation generally are less well known.



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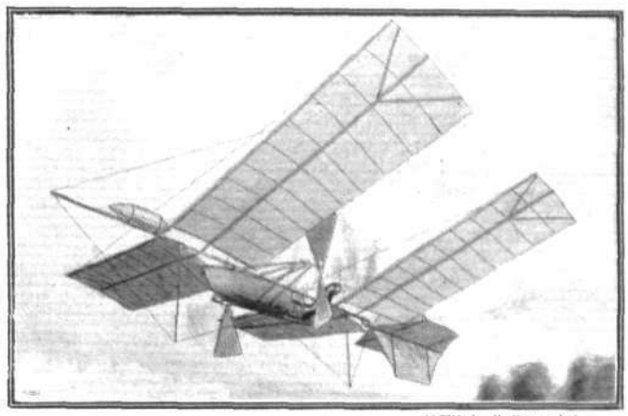
Hargrave's wing-propelled model built in Australia in 1885.—The wings were for propulsion only, the weight in flight being supported by the aeroplane surfaces fore and aft. Several successful flights were made. Elastic provided the motive power.

He read a most interesting and instructive series of papers before the Royal Society of New South Wales, and in 1885 he succeeded in demonstrating before that assembly the successful flight of a model that was propelled by flapping wings.

In America, the work of Langley is the most notable next to that of the Wrights. Professor Langley as secretary of the Smithsonian Institution at Washington, D.C., held one of the highest scientific posts in the country, and he devoted most of his spare time to the study of flight. His experiments on the lift and resistance of inclined flat plates when moved through the air on the end of a whirling arm, are classic, likewise his treatise on the internal work of the wind. His experiments on model flying machines were characterised by a most extraordinary patience and perseverance, much of which was of necessity devoted to the construction of the small steam engine with which they were equipped.



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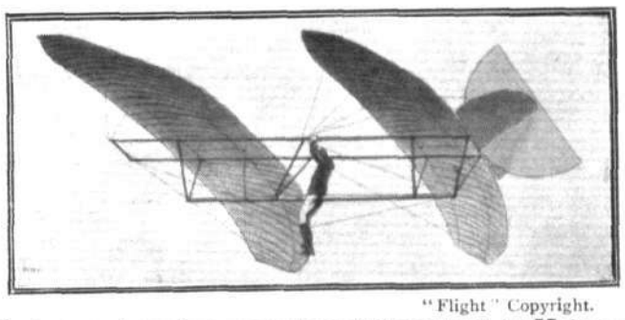
Langley's steam-driven model tandem monoplane, built in America about 1895, and successfully flown over the Potomac River.



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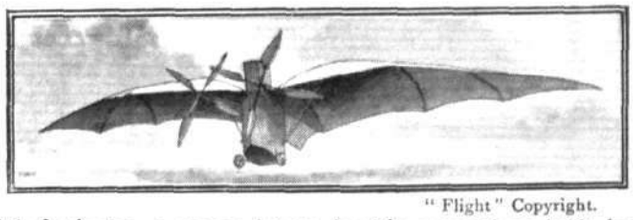
Montgomery's tandem monoplane glider piloted by Maloney. The experiments were made in California about 1905, and were noteworthy on account of the automatic stability of the machine as demonstrated by the fact that several successful glides were accomplished after preliminary ascents in a balloon.

The type of aeroplane that Langley adopted may be described as a tandem monoplane, that is to say it had a similar pair of wings fore and aft. The later flights of his models were very successful, and Langley was commissioned by the American Government to build a full-sized machine. This machine he constructed on more or less the same lines as his models, and an attempt was made to fly it over the Potomac River. It was mounted on the roof of a houseboat, and had a special launching apparatus. This unfortunately failed to act properly, for it tipped the machine head first into the river. The aeroplane was repaired and another attempt was made,



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Ader's Avion, a steam-driven bat-like monoplane built by the famous electrical engineer, and tried in 1897. It is said to have lifted itself off the ground for a brief period during a test in the presence of the French Army authorities.

but the same thing happened again, and the authorities, being none too enthusiastic, withdrew their further support. Langley very naturally suffered a great disappointment in this, as well he might, for it is a poignant fact that nine days later the Wrights made their first successful flights. It was, in fact, on December 8th, 1903, that the second failure of the Langley aeroplane took place at Arsenal Point, near Washington, and on December 17th that the Wrights achieved their success.

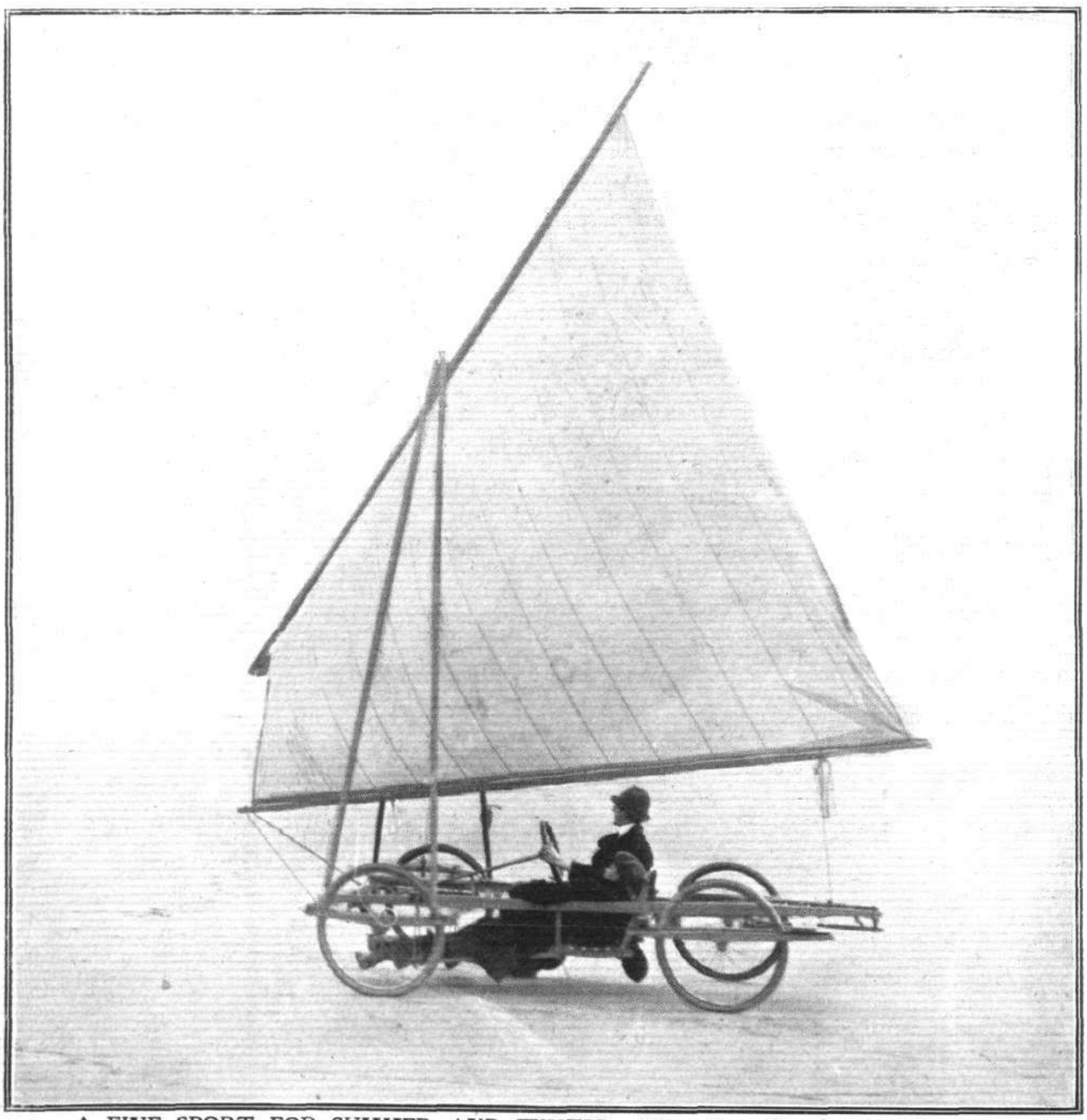
Another American pioneer was Prof. Montgomery, who designed and constructed some very successful tandem monoplane gliders in California. They were flown by Maloney, who was accustomed to ascend in a balloon in order to obtain the requisite initial altitude. The Montgomery gliders were designed for automatic stability, and apparently gave good results, for it was essentially an entanglement of the launching gear that ultimately caused Maloney's death.

The earlier history of aviation in France include the names of Penaud, who may be said to be the inventor of the model aeroplane, for he was the first to employ an elastic motor in 1871. Tatin was one of the first to experiment with power-driven models in 1879, when he used compressed air. Ader, the famous electrical engineer, whose name is identified with telephones, built three steam-driven monoplanes of curious bat-like form, but his success was apparently of the same order as that of Maxim. His machines were constructed almost entirely of hollow spars, and were exceptionally light for their size.

Of all the earlier names in aviation, none is better or more deservedly well known than Marey, the author of that far-famed work on "Animal Mechanism." In the realm of flight, his "Le Vol des Oiseaux," which first appeared in 1890, is a classic, and is famous for the remarkable illustrations of the action of a bird's wing obtained by a process of cinematograph photography.

The Navy's Parseval over London.

THE Metropolis has had an early opportunity of seeing the Parseval airship purchased by the British Government for the Navy. On Monday afternoon about half past four the airship was brought out, and after circling round Farnborough Common, and getting up to a height of 2,000 ft., she was headed for London. Steering a direct course, the airship passed over Brooklands and then across South London, past the Houses of Parliament to St. Paul's Cathedral, where the airship was turned. With the wind behind, the Parseval made a fast run back to Farnborough, which was reached at a quarter past six. The wind had veered round a little, and so the vessel was moored in the open for some time until the weather conditions were more suitable for getting her into the shed, Nine passengers were on board, including Lieut. Stelling, of the Parseval Co., in charge; Herr Schaak, in charge of the motors, and a German mechanic; Capt. Seuter, R.N.; Commander Masterman, R.N., Commandant of the Naval Wing, Royal Flying Corps; Lieuts. F. L. Boothby and Wilson, R.N.; Engine-room Artificers Marchant and Cahill; and Mr. Ryan, representing Messrs. Vickers.



A FINE SPORT FOR SUMMER AND WINTER.—"Aeroplaging" on sands or aerodrome.

The Royal Aero Club of the United Kingdom

OFFICIAL NOTICES TO MEMBERS

Committee Meeting.

A MEETING of the Committee was held on Tuesday, the 1st inst., when there were present: Col. H. C. L. Holden, C.B., F.R.S. (in the Chair), Mr. Griffith Brewer, Mr. Ernest C. Bucknall, Mr. G. B. Cockburn, Mr. John D. Dunville, Prof. A. K. Huntington, Mr. F. K. McClean, Mr. J. T. C. Moore-Brabazon, Mr. Alec Ogilvie, Mr. C. F. Pollock, Mr. R. W. Wallace, K.C., and the Secretary.

New Member.—The following new Member was elected:—Lieut. C. E. H. Rathborne, R.M.L.I.

Aviators' Certificates.—The following Aviators' Certificates were granted:—

No.	Date.	
519	June 16, 1913	Sergt.-Maj. Albert Fletcher (Maurice Farman Biplane, Royal Flying Corps, Montrose).
520	June 16, 1913	Sergt.-Maj. Arthur Harold Measures (Maurice Farman Biplane, Royal Flying Corps, Montrose).
521	June 16, 1913	Lieut. George Hugh Vaus Hathorn, R.M.L.I. (Short Biplane, Central Flying School, Upavon).
522	June 16, 1913	Sergt. Charles Mullen (Maurice Farman Biplane, Royal Flying Corps, Montrose).
523	June 17, 1913	2nd Lieut. Reginald Charles Hope Bewes (Caudron Biplane, Ewen School, Hendon).
524	June 17, 1913	Sergt. Charles Edward Jarvis (Avro Biplane, Central Flying School, Upavon).
525	June 18, 1913	Major William Sefton Brancker, R.F.A. (Vickers Biplane, Vickers School, Brooklands).
526	June 18, 1913	Edwin Prosser (Caudron Biplane, Ewen School, Hendon).
527	June 20, 1913	2nd Lieut. Mervyn Noott (Bristol Biplane, Bristol School, Brooklands).
528	June 21, 1913	Capt. André Popovici (Roumanian Subject) (Bristol Monoplane, Bristol School, Salisbury Plain).
529	June 26, 1913	Lieut. C. E. Maude, R.N. (Avro Biplane, Central Flying School, Upavon).
530	June 30, 1913	Capt. Henry Hammond Shott, D.S.O. (Bristol Biplane, Bristol School, Brooklands).
531	June 30, 1913	2nd Lieut. Arthur Victor Newton (Special Reserve) (Bristol Biplane, Bristol School, Brooklands).
532	June 30, 1913	Lieut.-Col. Alexander Beamish Hamilton, (Bristol Biplane, Bristol School, Salisbury Plain).

The following Aviator's Certificate, taken in France, was approved: Lieut. Bertram C. M. Western.

Royal Aero Club Special Certificate.—The following Special Certificate was granted:—

S. Sydney Pickles, Cross Country Course: Hendon to Brighton and back (Caudron biplane).

F.A.I. Conference.—The report of the Conference of the Fédération Aéronautique Internationale, held at Brussels, on June 20th, 21st and 22nd, 1913, was received. The following Countries were represented at the Conference:—Belgium, France, Germany, Great Britain, Holland, Hungary, Italy, Sweden, Switzerland, United States. The regulations for the Gordon-Bennett Aviation Race for 1914 were discussed, and it was decided that, with a view to an increase of safety, the competing aeroplanes must be able to fly at a minimum speed to be fixed each year by the Fédération.

The International Law Committee of the Fédération also met and discussed the question of international travel of aircraft.

The Committee passed a unanimous vote of thanks to Mr. Roger W. Wallace, K.C., and Mr. Griffith Brewer for attending as delegates on behalf of the Royal Aero Club.

Aerial Navigation Regulations.—The Chairman reported on the recent Conference at the Home Office, at which representatives of the Admiralty, War Office, Home Office, and Royal Aero Club attended. The Committee appointed a Sub-Committee to consider what action the Club should take in the matter.

Accidents Investigation Committee.—On the motion of Col. H. C. L. Holden, the report on the fatal accident to Lieut. J. R. B. Kennedy was adopted.

(*Note.*—Full report will be found under these notices.)

Royal Aero Club General Committee.—It was decided to hold a meeting of the General Committee on the 15th inst. at the Royal Aero Club. The following Clubs associated with the Royal Aero Club will be invited to attend:—Scottish Aeronautical Society, Aero Club of Ireland, Bristol and West of England Aero Club, East Riding Aero Club, Manchester Aero Club, Dover Aero Club, Yorkshire Aero Club, Aerial League of Australia, and Aeronautical Society of South Africa.

Hurlingham Balloon Races.

The Long Distance Race for the Cup presented by Mr. A. Mortimer Singer was held on Saturday last, and resulted in a win for Mr. C. F. Pollock, who crossed the Channel and alighted close to Rouen.

The next race will take place at Hurlingham on Saturday, July 12th, 1913, for the Challenge Cup presented by Mr. F. Hedges Butler. Entries close on Wednesday, the 9th inst., at 10 a.m. Entries have so far been received from Mr. John Dunville, Mrs. John Dunville, Major E. M. Maitland, Mr. L. H. Mander, Mr. James Radley, and Mr. A. Mortimer Singer.

Members will be admitted free to the Hurlingham Club on presentation of their Royal Aero Club Membership Cards.

Fatal Accident at Shoreham.

Engineer Lieut. E. F. Briggs, R.N., and the Secretary visited Shoreham on Monday last, June 30th, 1913, and inspected the wrecked aircraft and collected evidence from the eye-witnesses of the accident. The inquiry will take place on Monday next, the 7th inst.

Daily Mail £5,000 Prize: Circuit of Great Britain.

Intending competitors are reminded that the entries close on July 16th, 1913, at 12 noon.

Full particulars can be had on application to the Secretary of the Royal Aero Club.

Daily Mail £10,000 Prize: Cross-Atlantic Flight.

The regulations governing this prize are printed in this issue. All enquiries are to be addressed to the Secretary of the Royal Aero Club.

Britannia Trophy.

The "Britannia Trophy," presented to the Royal Aero Club by Mr. H. Barber, will be awarded to the British aviator who, on the opinion of the Committee, shall have accomplished the most meritorious performance in the air during the year. The adjudication of the Trophy will be made as soon as possible after December 31st in each year, and the first award will be made for the year 1913.

ACCIDENTS INVESTIGATION COMMITTEE OF THE ROYAL AERO CLUB.

REPORT No. 14.

REPORT ON THE FATAL ACCIDENT TO LIEUT. JAMES ROBERT BRANCH KENNEDY, R.N., WHEN FLYING AS A PASSENGER WITH MR. CHARLES GORDON BELL AT BROOKLANDS, ON FRIDAY, JUNE 13TH, 1913, AT ABOUT 5.30 P.M.

Brief Description of the Accident.—Mr. Charles Gordon Bell, flying a Martin Handasyde Monoplane fitted with a 120 h.p. Austrian Daimler motor, with Lieut. J. R. B. Kennedy as a passenger, on Friday, June 13th, 1913, arrived over the Brooklands Aerodrome at about 5.15 p.m., having flown from Eastchurch. The aircraft was observed to approach Brooklands at a very low altitude. The pilot then proceeded to circle over the sheds, still at a very low altitude, and only just clearing the roofs. He flew in this manner for about 15 minutes, making perhaps a dozen complete turns always at a low altitude and always steeply banked. On what proved to be his last turn, he flew down a passage between the sheds and turned down another passage at right angles to the former, and, whilst still turning, rose over and just cleared the roof. After this the aircraft must have side-slipped, the left wing tip struck the ground at about 40 yards from the sheds, thus bringing the aircraft headlong to the ground. The aircraft was wrecked, the passenger, Lieut. Kennedy, who was sitting in front of the pilot, was killed instantly, and the pilot, Mr. C. Gordon Bell, was seriously injured.

Lieut. J. R. B. Kennedy was granted his Aviator's Certificate No. 423, on February 18th, 1913, and Mr. C. Gordon Bell, No. 100, on July 4th, 1911, by the Royal Aero Club.

Report.—The representatives of the Accidents Committee went to

Brooklands and visited the scene of the accident within a few hours of its occurrence, and took evidence from the eye-witnesses. The Committee sat on Monday, June 23rd, 1913, and received the report of the Club's representatives. Mr. G. H. Handasyde and Mr. H. P. Martin, of the firm of Martin and Handasyde, the designers and manufacturers of the aircraft, attended and gave evidence on various points raised by the Committee. From the consideration of the evidence, the Committee regards the following facts as clearly established :—

1. The aircraft was built at Brooklands in February, 1913.

2. Mr. Gordon Bell had made numerous flights, cross-country and otherwise, and was well accustomed to this particular aircraft.

3. There was practically no wind at the time of the accident.

4. There was nothing wrong with the motor or aircraft generally.

Opinion.—As the aircraft and motor were in perfect order, the Committee is of opinion that the accident was solely due to the handling of the aircraft. The pilot, experienced and competent as he was, showed a grave error of judgment in flying as he did over and around the sheds at Brooklands. This particular place is one which is reserved for spectators, and the Royal Aero Club has prohibited any manœuvring low down over such places.

At the same time it should be pointed out that the practice of steeply-banked turns and close steering of aircraft may be highly valuable, provided this be done with due regard for the life and property of others.

DAILY MAIL £10,000 PRIZE. CROSS-ATLANTIC FLIGHT.

(Under the Competition Rules of the Royal Aero Club.)

The Proprietors of the DAILY MAIL *have offered the sum of £10,000 to be awarded to the aviator who shall first cross the Atlantic in an aeroplane in flight from any point in the United States, Canada, or Newfoundland to any point in Great Britain or Ireland, in 72 consecutive hours. (The flight may be made either way across the Atlantic.)*

Qualification of Competitors.—The competition is open to persons of any nationality holding an Aviator's Certificate issued by the International Aeronautical Federation and duly entered on the Competitor's Register of the Royal Aero Club.

Entries.—The Entry Form, which must be accompanied by the Entrance Fee of £100, must be sent to the Secretary of the Royal Aero Club, 166, Piccadilly, London, W., at least 14 days before the entrant makes his first attempt.

No part of the Entrance Fees is to be received by the *Daily Mail*. All amounts received will be applied towards payment of the expenses of the Royal Aero Club in conducting the competition. Any balance not so expended will be refunded to the competitor.

Starting Place.—Competitors must advise the Royal Aero Club of the starting place selected and should indicate as nearly as possible the proposed landing place.

All starts must be made under the supervision of an Official or Officials appointed by the Royal Aero Club.

Identification of Aircraft.—Only one aircraft may be used for each attempt. It may be repaired *en route*. It will be so marked before starting that it can be identified on reaching the other side.

Stoppages.—Any intermediate stoppages may only be made on the water.

Towing.—Towing is not prohibited.

Start and Finish.—The start may be made from land or water, but in the latter case the competitor must cross the coast line in flight. The time will be taken from the moment of leaving the land or crossing the coast line.

The finish may be made on land or water. The time will be taken at the moment of crossing the coast line in flight or touching land.

If the pilot has at any time to leave the aircraft and board a ship, he must resume his flight from approximately the same point at which he went on board.

General.

1. A competitor, by entering, thereby agrees that he is bound by the regulations herein contained or to be hereafter issued in connection with this competition.

2. The interpretation of these regulations or of any to be hereafter issued shall rest entirely with the Royal Aero Club.

3. The competitor shall be solely responsible to the officials for the due observance of these regulations, and shall be the person with whom the officials will deal in respect thereof, or of any other question arising out of this competition.

4. A competitor, by entering, waives any right of action against the Royal Aero Club or the proprietors of the *Daily Mail* for any damages sustained by him in consequence of any act or omission on the part of the officials of the Royal Aero Club or the proprietors of the *Daily Mail* or their representatives or servants or any fellow-competitor.

5. The aircraft shall at all times be at the risk in all respects of the competitor, who shall be deemed by entry to agree to waive all claim for injury either to himself, or his passenger, or his aircraft, or his employees or workmen, and to assume all liability for damage to third parties or their property, and to indemnify the Royal Aero Club and the proprietors of the *Daily Mail* in respect thereof.

6. The Committee of the Royal Aero Club reserves to itself the right to add to, amend or omit any of these rules should it think fit.

166, Piccadilly, W. HAROLD E. PERRIN, Secretary.

QUESTIONS IN PARLIAMENT.

IN the House of Commons on the 26th ult. Mr. Fell asked the First Lord of the Admiralty if his attention had been called to the accidents which had taken place with aeroplanes which had met with accidents and had been repaired, and which were afterwards unsound; if the Admiralty scrapped aeroplanes which had been badly damaged or repaired them; and, if so, if care was taken that absolutely new material was put into them.

Mr. Macnamara: The Board of Admiralty are, through their advisers, in the closest touch with all the information that can be obtained in connection with accidents that have taken place with aeroplanes. If a machine is so badly damaged that it is beyond repair it is scrapped. If it is so damaged that complete rebuilding is necessary, care is taken that the machine is turned out almost as good as new. A good supply of spare parts is provided for making small repairs. As far as possible new material is always used.

On Tuesday last, Mr. Fell, on behalf of Capt. Faber, asked the Secretary for War whether he had now seen the report of the Public Safety and Accidents Investigation Committee of the Royal Aero Club relative to the deaths of Lieuts. Arthur and England; whether the report concerning the death of the former was that the joint between the new and the old piece of the main spar of the aeroplane had been made in a most improper and unsafe manner, and that the Royal Flying Corps and Royal Aircraft Factory contained no entry of this repair; whether the latter should have had such an entry; whether he still attached no blame to anybody for the deaths of these officers; and whether, if there was blame, to whom it should be attributed.

Col. Seely: I have seen the report in question. The strictest instructions are laid down for recording repairs effected to Army aeroplanes. But as regards the accident to Lieut. Arthur, in spite of most careful inquiry, it has been impossible to ascertain by whom the repair was carried out. Blame is undoubtedly attributable to some person unknown; the repair appears to have been made without authority, and wilfully concealed by replacing the fabric. Mr. England was not an officer of the R.F.C., and the aeroplane in which he met his death did not belong to the Government.

Mr. Fell: In view of the very grave facts stated by the War Minister is the right hon. gentleman making further inquiries with regard to this matter, or is it to be allowed to sleep? Bad material was put in, and there was bad workmanship.

Col. Seely: This is not a question of bad workmanship or bad material in the original machine. An accident occurred to the machine, and it was repaired secretly by an unauthorised person. I think it is probable, though one cannot be sure, that such a thing will never occur again. The most careful inquiries have failed to reveal who was the guilty party.

Mr. Alan Sykes: Did this accident happen after or before the machine came into the military authorities' hands?

Col. Seely: One cannot tell in the least how it occurred. Nor do I believe it is possible to find out whether this injury had been sustained beforehand. I do not think this is a kind of accident that we need apprehend will occur again.

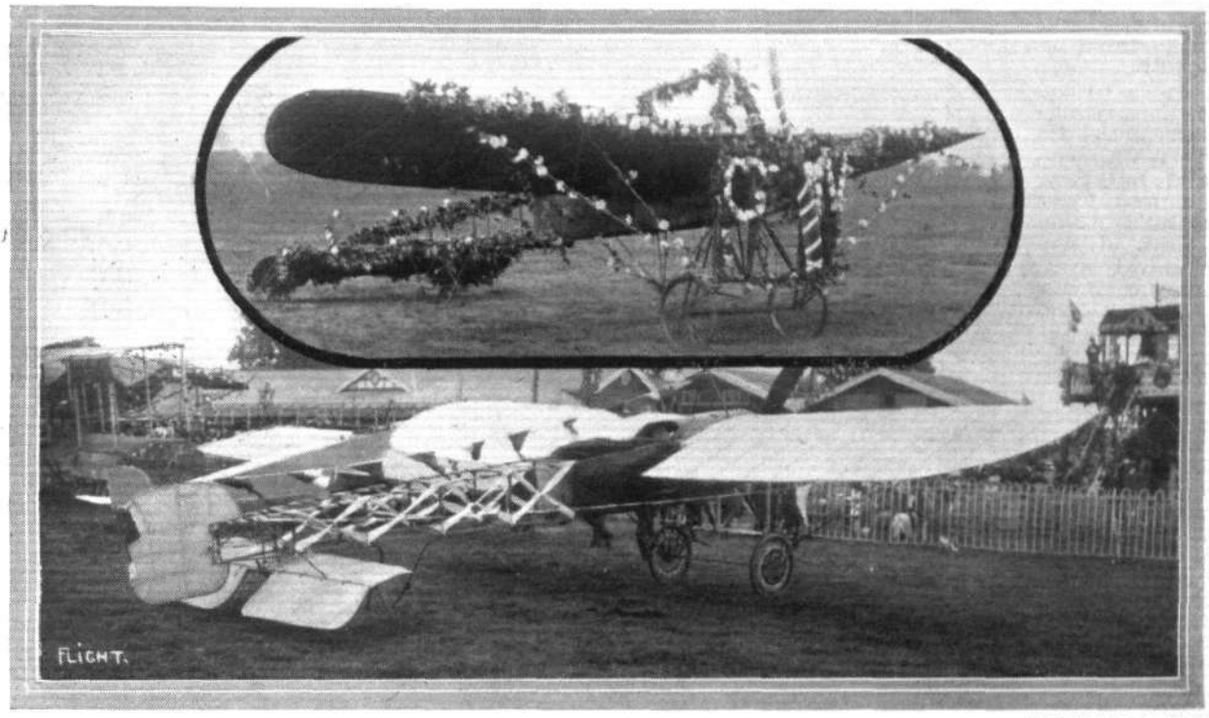
Mr. Alan Sykes: Was it a new machine when it was bought?

Col. Seely: I am nearly sure it was a new machine, and a very good one too. It appears to be impossible to ascertain these little defects when they are carefully concealed by a guilty person.

Replying to certain criticisms which had been made during the discussion on the third reading of the Consolidated Fund (No. 2) Bill, on Tuesday last, Col. Seely (Secretary for War), said he agreed that the officers at the Central Flying School on Salisbury Plain should be well housed. Arrangements had been made to put up the necessary buildings, and they would be proceeded with without the least delay. Although the risks incidental to flying were great, there had not been one serious accident at the School. That was a marvellous record that had no parallel in any other country, and he hoped this immunity would continue.

FLYING AT HENDON.

LAST week was a very busy one at Hendon, for, besides the usual week-end meeting, Wednesday and Thursday were special days. Except that a high wind on Wednesday and Saturday somewhat upset the arrangements, good shows were nevertheless put up on each day. Wednesday's meeting, which was organised by the Institut Français de Londres, was announced as a combined automobile and aeroplane affair. The part cast for the automobiles consisted of a procession of florally decorated cars, starting from Connaught Square and passing Marble Arch House (the offices of the Institut) where they were inspected by President Poincaré. The cars were then to make their way to the Hendon aerodrome —a part of the programme which somehow went astray so far as any procession was concerned. Prizes were given for the best decorated cars, which were arranged in several classes, the prizes being presented by Princesse de Wrède. A prize of ten pounds each was also given to the best decorated monoplane and biplane. Several aeroplanes embellished with flowers and flags lined up in front of the enclosure, and looked, if somewhat unusual, smart. The winners were, E. Cheeseman's 35 h.p. Blériot monoplane, and Louis Noel's Grahame-White biplane, both of which were simply smothered with flowers—needless to say, they did not fly in this rig-out. J. L. Hall's 50 h.p. Blériot was effectively decorated, the planes having diagonal ribbons of red, white, and blue, whilst the British and French flags also played an important part in the scheme. During the afternoon Hall made a straight flight across the aerodrome on his decorated machine, but did not attempt a circuit. Jules Nardini's Deperdussin monoplane was patriotically decorated with the Italian flags. Some of the cars looked very pretty, but taking it on the ensemble it was rather disappointing. Two of the winners, M. Guillat's Wolseley car and



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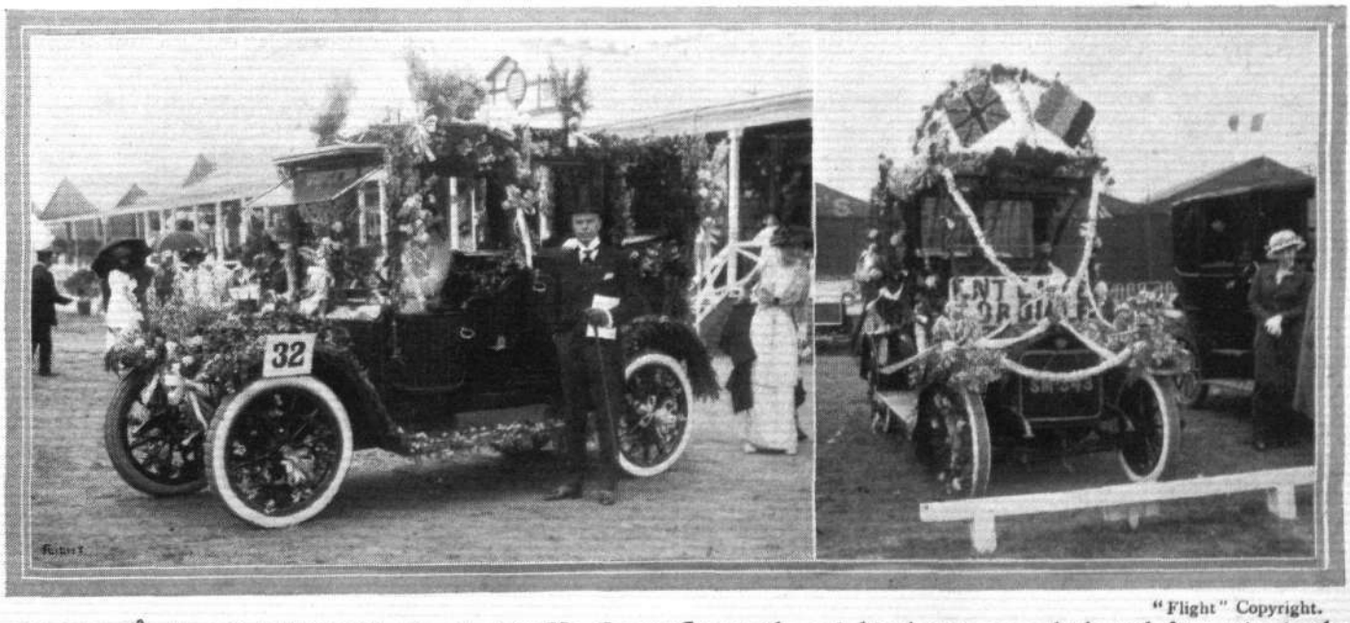
THE AERIAL FÊTE AT HENDON.—A couple of the decorated aeroplanes. Above, Mr. Cheeseman's Blériot which secured first prize, and, below, Mr. J. L. Hall's Blériot.



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AERIAL FÊTE AT HENDON.—On the left Mr. George Grossmith and his Austin car, which took first prize in the Theatrical Section. On the right a Wolseley car which secured first prize of Section 2.

Mr. George Grossmith's Austin (theatrical section) were quite the prettiest there. The former car was decked with blue cornflowers, red geraniums, and white carnations, with the British and French flags made up of flowers. The colour scheme of the latter car was blue only.

As previously mentioned, a high wind prevented any of the races that had been arranged from taking place, so only a few exhibition and passenger flights were made. The event of the day as far as flying was concerned, was the arrival of Robert Slack from Paris, on the 60 h.p. Rhone-Morane-Saulnier monoplane. He landed in the Aerodrome at 1.41 p.m., after a most trying journey lasting nearly seven hours. Gustav Hamel arrived at the aerodrome from Brooklands about midday, and also reported a very rough journey. About 3 p.m. he gave a brilliant exhibition flight, Verrier ascending later on in the Aircraft Maurice Farman biplane. After this, Hamel went up again on the 80 h.p. two-seater Blériot, taking with him as passenger, Capt. Tyrer, and climbing very rapidly. Near the ground they were blown about a good deal, but higher up the wind was much steadier, but considerably stronger, the monoplane at times remaining almost stationary. When he had been up about 20 mins., and was only a mere speck in the clear blue sky, he made one of his impressive spiral descents. On landing, his barograph registered a height of 8,100 ft. Three machines then went up within a few minutes of each other—H. M. Brock on the 35 h.p. Anzani Deperdussin monoplane, R. Slack on the 60 h.p. Morane-Saulnier monoplane, and Verrier on a Maurice Farman biplane with a passenger. After this, Hamel and Verrier made several passenger flights, and Brock also gave another exhibition on the tiny Dep. J. L. Hall attempted to take up a passenger on his 50 h.p. Blériot, but was unable to rise more than a few feet from the ground owing to a faulty adjustment to the tail plane. The aeroplanes having done their best to amuse, the motor cars then had a turn. All the decorated cars formed up in single file, and started on a very rough journey across the aerodrome, alongside the various enclosures, finishing up at No. 1 pylon. From the top of the latter it was then announced that "flowers and streamers may now be bought at this pylon." Forthwith, the occupants of the various enclosures were let loose and swarmed across the aerodrome. It was a very curious sight when viewed from the top of the pylon. The "battle" then commenced, streamers being very much in evidence, but few availed themselves of the opportunity of buying flowers. When the crowd had got all the fun they could out of this event, they departed more or less satisfied.

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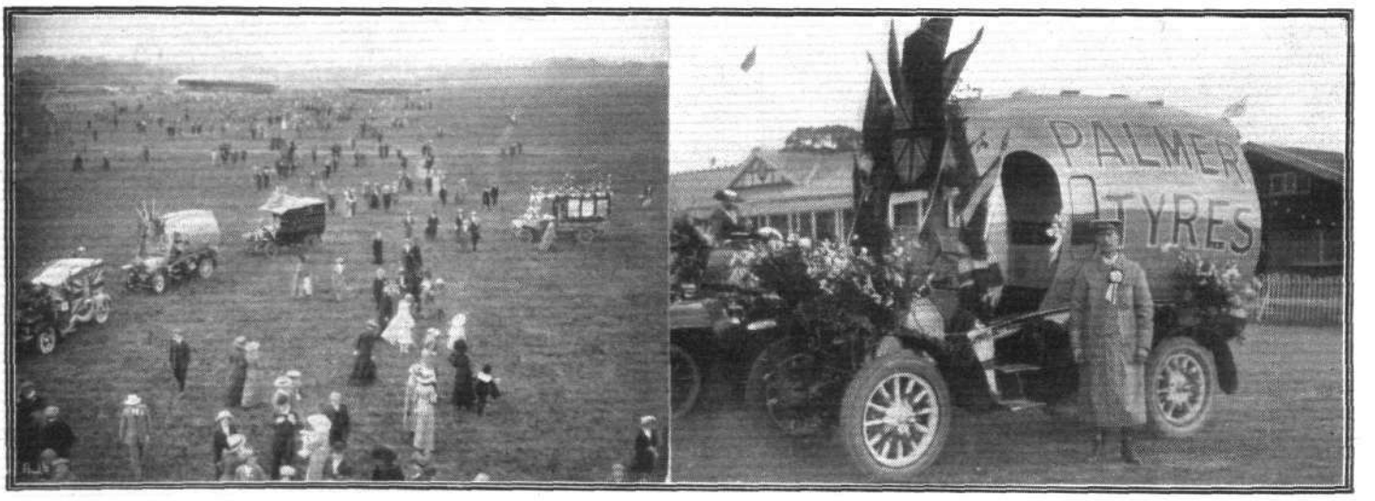
AERIAL FÊTE AT HENDON.—Mrs. Cecil Baker, Lady Levinge, Mrs. and Miss Grahame-White, who assisted in the decoration of the winning aeroplane.

On Thursday, the day following, another of the illuminated night flying demonstrations was held. This demonstration was in every respect similar to those previously described, so it will only be necessary to give a brief account of this particular meeting. As on other occasions, quite a number of exhibition flights were made in the evening just before darkness. M. Gilbert, who had arrived earlier in the day from Paris on a similar machine to that flown over by Slack the day previous, gave a very fine demonstration of his skill in handling this fast little monoplane. Slack, although new with this type of machine also showed that he could handle it in quite a masterly fashion. H. M. Brock made his first public appearance on the 110 h.p. Anzani Deperdussin monoplane, and demonstrated that he could perform even better on this powerful machine than on the "35." Other exhibitions were made by the following: Gustav Hamel on the 80 h.p. Blériot, J. L. Hall on the 50 h.p. Blériot, Marcus D. Manton on the 50 h.p. Grahame-White biplane, Lewis Turner and G. L. Temple (with a passenger) on the 45 h.p. and 35 h.p. Caudron biplanes respectively. At 7.40 p.m. Lieut. Briggs, R.F.C., left for Eastchurch on a Government Blériot monoplane, arriving at his destination 50 mins. afterwards. The first up for the nocturnal demonstration was Noel, on the Maurice Farman biplane, who produced a very impressive effect by flying with all his lights out and suddenly emerging in the path of a powerful searchlight. Besides Noel, who made several other flights, the only other pilot up was Marcus D. Manton, on the Grahame-White 'bus, Nardini being unable to get his machine



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AERIAL FÊTE AT HENDON.—A procession of decorated vans across the aerodrome, and, on the right, the unique decorated van of the Palmer Cord Tyres.

in flying trim. The proceedings were, as usual, brought to a close by a firework display. Claude Grahame-White, who flew a Morane-Saulnier hydro-monoplane over from Paris to Putney that day, paid a short visit to the aerodrome, and then just returned home for a well-earned rest.

There was a pronounced Anglo-French aspect to the large attendance up at Hendon on the Saturday and Sunday, as was fitting for the occasion of the "entente cordiale" meetings. Saturday was fine, but a 30–35 m.p.h. north-westerly wind hung up the two racing events—a speed handicap and an altitude contest. The Society of Architects paid a visit to the aerodrome on this particular afternoon, a number of the popular tea-tents being reserved for them. At 3.30 p.m. Louis Noel went up on the rebuilt "G.-W."–Maurice Farman biplane, and was tossed about rather unpleasantly by the wind. H. M. Brock next came out on the 110 h.p. Anzani–Deperdussin monoplane, N. Spratt following him up on the 60 h.p. Anzani-Deperdussin, or "flying rocket." At the same time Verrier ascended on the 70 h.p. Maurice Farman biplane. All three circled the aerodrome for about 5 mins., and landed one close upon the other. Another flight by Brock on the 100 h.p. Dep., and from thence onward Noel and Verrier took up passengers—mostly ladies—on their respective Maurice Farmans. At about 7 p.m., when nearly everybody had gone, things livened up a bit. M. Gilbert and R. Slack came out on their Morane-Saulnier monoplanes and both put up a very fine display. While both the above were in the air, Noel accompanied by a passenger, on the Maurice Farman biplane, Jules Nardini on his 50 h.p. Dep., Marcus D. Manton on the "G.-W." 'bus, and G. L. Temple on his 35 h.p. Caudron biplane, were up at the same time. Gilbert was stunting in a marvellous manner, at one time looking as if he were going to have trouble, for while the machine was climbing, it banked over to the right at the same time, and appeared to stop suddenly in mid air, as a "stalled" machine would. The attitude of the monoplane was unpleasant to witness, and it was with some relief that we saw Gilbert dive the machine with a left-hand spiral and regain his normal position.

The flying on Sunday was somewhat curtailed owing to the high wind which had moderated but little, if at all. M. Gilbert left for Paris, on his Morane-Saulnier monoplane, shortly before 4 p.m. He completed the journey in a little over two hours. Robert Slack made several exhibitions on the other Morane-Saulnier—which, by the way, is the property of the Grahame-White Co., Slack having been appointed as pilot of these machines for this company. Noel and Verrier were both out during the afternoon on their respective Maurice Farmans. Other flights were made by H. M. Brock on the 110 h.p. Deperdussin monoplane, and Marcus D. Manton on the "G.-W." 'bus.

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FROM THE BRITISH FLYING GROUNDS.

Brighton-Shoreham Aerodrome.

MR. ERIC PASHLEY did most of the flying last week on his 50h.p. H. Farman 'bus, being out practically every day. The wind has been very high recently, but Mr. Pashley does not seem daunted by anything less than 35 m.p.h. On Saturday he was out in the afternoon, when a very strong breeze was blowing. He went up to about 250 ft., and then went out across Bungalow Town, returning over the hangars. A good landing was made, but after rolling a few yards a gust of wind lifted the 'bus off the ground, and it appeared as if she was going to stand on her tail. On subsequent landings the machine had to be held down. On Sunday, Mr. Richard N. Wight went up in the 60 E.N.V. Avro, and, as reported elsewhere, met with an accident which ended fatally. Monday evening, Mr. Eric Pashley was up with his brother Cecil. An excellent exhibition was given, figure eights and sharp banked turns being executed within twelve feet of the ground.

On Tuesday, Mr. A. Geere, who so pluckily attempted to rescue Mr. Wight on Sunday, made several straights in an Avro 'bus, his hands still being heavily bandaged. Geere has shown great fortitude, and according to FLIGHT correspondent he has borne up very bravely under the trying circumstances. Shaw then went for several straights, and Elliott, a new pupil, had several rolling trials in which he displayed much judgment for a beginner.

Brooklands Aerodrome.

OWING to the strong and gusty wind prevailing throughout last week, most of the flying had to be done in the early hours each day.

On Wednesday, Mr. Hamel flew over to Hendon in his two-seater Blériot monoplane, carrying his mechanic as a passenger, returning to Brooklands the next day with a lady passenger.

Mr. Barnwell, on Thursday, made some good test flights on the No. 7 Vickers monoplane, fitted with a 60 h.p. R.E.P. engine.

On Sunday the wind was strong and gusty as ever, but Mr. Hamel took up a number of passengers, amongst whom was Mr. F. C. Mathews, of New Malden, the winner of the ballot for the free passenger flight.

Bristol School.—Bendall for test on Monday last week, then with Capt. Shott. Afterwards this pupil made four good straights alone, landing well. Bendall sitting behind Lieut. Newton on straights; wind put a stop to further flying. Merriam tried conditions, taking Mr. Richard Powell as passenger. Afterwards up behind Lieut. Newton and Capt. Shott on straights. Bendall winding up the day's work by giving Mr. Grahame Harris a flight.

The only flight on Tuesday was made by Merriam, with Lieut. Newton as passenger, who found it terribly bumpy.

Too windy in the morning on Wednesday for flying, but about 7.30 p.m. wind dropped a little. Bendall made a test then behind Capt. Shott, afterwards pupil alone on straights. Bendall behind Lieut. Newton and Mr. Richard Powell. Darkness prevented further flying.

Bendall test on Thursday, then behind Lieut. Newton, Capt. Shott doing circuits and figures of eight. Merriam behind Lieut. Newton on straights and circuits, then allowing this pupil to go alone for first time, doing very good straights and landings. Then Merriam behind Mr. Pendlebury on several straights, who is getting on very well. Messrs. Skene and Grahame Harris and Mr. Richard Powell solo each. Merriam tested conditions and found it was too bumpy for further work.

On Friday, Merriam up twice before pupils arrived. Then up with Capt. Shott in a puffy wind. Later it became a little calmer, and this pupil doing two straights alone. Mr. Richard Powell followed, also doing straights. Mr. Grahame Harris made a few trips, it being too bad for circuits. Merriam finished up by taking Mr. Richard Powell for a flight in a good wind. Wind was too bad for any flying in the evening.

Bendall out for test on Saturday, then Lieut. Newton on several straights and circuits, Capt. Shott doing figures of eight. Mr. Richard Powell also up for several figures of eight. Bendall up behind Mr. Pendlebury on straights and circuits. Lieut. Newton circuits, and right-hand turns, making very good landings. Mr. Richard Powell and Capt. Shott doing figures of eight at 200 and 300 ft., and making nice landings, the latter landing with a very fine *vol plané*. Bendall up again with Mr. Pendlebury, whilst Lieut. Newton and Capt. Shott were out for a solo each. Bendall out with Mr. Pendlebury on straights. This instructor then out for a test on a biplane. Too windy for further flying.

Vickers School.—Monday morning, last week, Barnwell and Knight on biplane with Mr. Elsdon. Knight and Mr. Andreae on No. 3 mono.

Barnwell testing No. 7 mono. Thursday morning, then on biplane with Messrs. Newton Clare, Fairfax, Elsdon and Smith. Knight on

Major W. S. Brancker, who has just secured his *brevet* in excellent style in a very bumpy wind on a Vickers biplane.

biplane with same pupils. In the evening Barnwell again testing No. 7 mono. in bumpy wind.

Messrs. Barnwell, Knight and Mitchell on No. 7 mono. Friday. Knight on biplane with Mr. Newton Clare. Barnwell on biplane with Messrs. Newton Clare, Elsdon and Fairfax. In the evening, Barnwell on biplane with passenger in wind up to 25 m.p.h.

Saturday morning, Messrs. Barnwell, Knight, Andreae and Orr Paterson on No. 7 mono. Knight on biplane with Messrs. Fairfax, Elsdon, Webb and Newton Clare. Barnwell on biplane with pupils Fairfax and Newton Clare.

Eastbourne Aerodrome.

WEDNESDAY of last week, Fowler was out in the early hours of the morning on the school biplane. He gave instructions to Messrs. Fill, Bevis and Morkill, taking each up two or three times. He was out again in the afternoon with the same pupils, after which he did some exhibition work and passenger-carrying.

Thursday was a blank day owing to high winds, which continued until Friday mid-day. In the afternoon all hands were busy salving and housing a Borel hydro-monoplane, which came down into the sea off Bexhill. The machine was piloted by Lieut. Travers, who, owing to engine trouble, was forced to make a descent three-quarters of a mile out, but by clever manipulation he brought it ashore under its own power in a nasty sea. With the up-to-date appliances which the Eastbourne Aviation Co. have, they were able to transport the machine 15 miles by road without having to dismantle any part, and it was housed in their hydroplane station at Eastbourne the same night.

Saturday morning, Fowler was out at dawn, taking in hand Messrs. Fill, Morkill, Bevis and Gassler, giving each several extended flights. Afterwards he flew the Company's new 70 h.p. Gnome Henry Farman hydro-biplane over to the waterplane station, in readiness to give instruction and passenger flights over the sea. During the evening Fowler had Mr. Fill in hand again, and took up a lady passenger.

Sunday was a day of rest, owing to a gusty wind which prevailed all day, but on Monday morning everything was activity again, and shortly after four o'clock the "Song of the Gnome" was heard, Fowler taking Messrs. Fill, Bevis and Morkill (the early risers) up in turn, time after time, the school 'bus being in the air for over four hours. These pupils are all in the pilot's seat, and are making very good progress. Later in the morning Gassler and Roberts were doing solos on the Bristol. In the afternoon Fowler took Morkill for a stunt, and on returning Roberts went for his *brevet* test, but after completing the five figures of eight, in a fresh breeze, was forced to land within a quarter of a mile from the mark, owing to engine trouble. The wind freshened and put a stop to any more work for the evening.

Tuesday morning, Fowler was at it again with Morkill in the early hours, and Roberts made another attempt for his ticket, but this time the wind was considerably stronger, and forced him to land after one circuit. The wind put a stop to any further work.

London Aerodrome, Collindale Avenue, Hendon.

Grahame-White School.—Sunday last week school out early. Capt. Boddam Whetham doing straights with Instructor Cheeseman, afterwards solo straights. Mr. Carr circuits and Mr. Manton testing. Monday, Tuesday and Wednesday pupils kept in hangars, too windy for flying, and on Saturday Mr. Russell doing straights with Instructor Cheeseman behind, afterwards circuits. Mr. Carr circuits.

Mr. D. C. S. Evill, one of the pupils who last week obtained his Royal Aero Club flying certificate at the Grahame-White School, Hendon.

Blériot School.—On Thursday, last week, Capt. Cox, Lieut. Low and Mr. Gower were all out practising on No. 2. Mr. Gower got the tail of the machine well up and went very well and the other pupils also did well. The preceding day Mr. Hamel had flown over to Hendon from Brooklands on his 80 h.p. tandem, for the battle of flowers, and afterwards returned.

On Saturday, Mr. Gower was the first pupil to arrive, and was thus able to do four nice straights before any other pupils arrived. Mr. Williams was next on the scene and managed to do two straights on No. 1 before the wind rose.

British Deperdussin School.—Thursday, last week, Mr. Brock flew the 100 h.p. machine for the first time, making three solo flights in the morning and one in the afternoon to 2,000 ft. ; then busy for the rest of the day taking 14 passengers one after the other. A party of five Swedish officers visited the school, and three of them had passenger flights with Mr. Brock. Mr. Spratt was also out on 60 h.p. two-seater.

Mr. Spratt out Friday evening on 60 h.p. for a solo to 2,000 ft. Then Mr. Brock on 100 h.p. with Mr. Murray (pupil), and also for solo. Mr. Brock handles this machine beautifully, and makes splendid landings.

In early morning, Saturday, Mr. Spratt up for flight in 60 h.p. Mr. Jaques rolling for 12 mins., showing improvement. Mr. Murray on same, but smashed machine by faulty landing. Mr. Mahla (new pupil) joined school.

Mr. Brock took 100 h.p. out for solo flight testing, Sunday, then busy for rest of evening taking passengers for joy rides.

W. H. Ewen School.—In spite of the fine weather the wind was very unfavourable for school practice last week.

On Thursday, Mr. L. W. F. Turner gave several exhibition flights on the 35 h.p. Caudron, but no pupils were out until Saturday, when the school started at 4.10 a.m., under the instruction of Messrs. L. W. F. Turner and E. Baumann. Mr. Turner made several flights on 35 h.p. Caudron No. 2, after which he handed the machine to H. Gist, who was doing circuits and figures of eight in good style. M. E. Baumann made a test flight on the 35 h.p. Caudron No. 1, and then handed the machine over to Messrs. Dalrymple-Clark and L. H. Jagenberg, who were making progress in straight flights, while Capt. Jennings was rolling, and Mr. L. A. Strange had his first instruction on same machine, making a good start. Mr. A. L. Russell also made two flights on the 35 h.p. Caudron No. 1.

Temple School.—On Wednesday last week George L. Temple came out to test the 35 h.p. Caudron, but found the wind far too bad for pupils. School work was prevented on Thursday owing to the high wind, and the next day G. L. Temple gave several exhibition flights. On Sunday afternoon he again gave an exhibition flight in a wind, and on Monday, at 4 a.m., flew down Collindale Avenue to wake pupils, later handing machine over to Douglas Ritchie for figure eights. Lieut. Maurice Ambler flew good circuits, R. Penny also one circuit, M. Lance left-hand turns, A. Vaile straights, T. Gran, promoted to Caudron, rolling. Later G. L. Temple put in another flight of 15 mins.

Salisbury Plain.

Bristol School.—Busteed test in monoplane on Monday, last week. Capt. Popovici, good monoplane solo. Capt. Barnby, Lieut. Osmond, R.N., and Lieut. Miley, R.N., all up for good biplane solos. Pixton with Lieut. Stevenson, a new pupil, for first trip. Too windy for tuition in the evening.

Wind too strong all day on Tuesday for flying, and too strong for tuition in the morning on Wednesday. Busteed number of test flights. In the afternoon, Pizey two tests. Busteed solo in Bristol tractor biplane. Then with Pizey as passenger. Pizey biplane tuition to Lieut. Stevenson and Lieut. Orton, two trips each, and with Mr. Thurstan and Mr. Bromer. Good biplane solos by Lieut. Osmond, R.N., Lieut. Miley, R.N., Capt. Barnby, and Air-Mechanic Pratt, all making two flights each with good right and left-hand banked turns, and these pupils will soon be ready for their *brevets*. Monoplane solos (sociable type) by Capt. Popovici (two), Lieut. Beroinade, Lieut. Pascanu, and Mr. Delaplane each for one. Busteed with passenger on new Bristol tractor biplane for long flight. Sippe up for solo on same machine.

On Thursday good biplane solos in the morning by Capt. Barnby (two) and Lieuts. Miley and Osmond two each. Lieut. Orton for his first solo, doing two circuits landing well. Capt. Popovici, Mr. Garnett, Lieuts. Beroinade and Pascanu all for excellent monoplane solos. Busteed solo on tractor biplane, then with Capt. Popovici. Pizey and Pixton up for solos on the tractor biplane, the latter taking Lieut. Stevenson for two trips.

No flying possible until the evening on Friday, when Pizey made a trial on the biplane, but found too bumpy for tuition work. Busteed out for solo on a tractor biplane.

On Saturday Pixton out on the biplane for two long flights, giving

"WHIP BEHIND."

tuition to Lieut. Stevenson. Busteed with Mr. Garnett as passenger for several test flights on a tractor biplane. Excellent solos were made by Lieut. Osmond, R.N. (two), Lieut.-Col. Hamilton (two), Lieut. Orton (two), and Air-Mechanic Pratt (two), all with good landings. Capt. Popovici did a good solo on the sociable monoplane. Sippe also for a solo on the tractor biplane.

Royal Flying Corps. 3rd Squadron.—Tuesday of last week was ideal for outdoor work, and plenty of good flying was carried out, several of the officers reaching good heights. Lieut. Cholmondeley out on 274 for 20 mins., flying at a height of 3,500 ft.; Lieut. Wadham made two flights on 203—one of 42 mins., getting to a height of 6,000 ft., also a flight of 17 mins., reaching a height of 3,200 ft.; Lieut. Roupell on 286, 15 mins. flying at a height of 1,600 ft.; Capt. Fox made two flights—one of 43 mins., getting to a height of 3,100 ft., and one of 600 ft.; Mechanic Yates on Blériot monoplane 221, getting to a good height and scouting around the Downs; Lieut. Porter two flights on 203, one of 20 mins. reaching a height of 3,000 ft.; Lieut. Conran an 11-min. flight on 203.

On Wednesday, Major Brooke-Popham was out on 203 for 12 mins., at a height of 1,500 ft. Lieut. Wadham made six flights on 203, in one trip getting up to 3,800 ft. Lieut. Roupell made two short flights on 286. Lieut. Conran on 288. Lieut. Cholmondeley four times on 274. Lieut. Abercombie out for 17 mins. on 288. Capt. Fox, on 219 Blériot, two flights, one of 23 mins. and another of 9 mins., getting to a height of 1,000 ft. and 400 ft. respectively. Air-Mechanic Yates then on Blériot for 8 mins. Capt. Allen on 203, and Lieut. Joubert de la Ferti on 289.

On Thursday Lieut. Porter made two good flights, one of 34 mins., at a height of 2,400 ft., and Air-Mechanic Yates on Blériot 219, Capt. Allen twice on 203, Capt. Fox on 219, Lieut. Conran on 288, 47 mins., 2,000 ft. Lieut. Wadham left for Cookham. Capt. Fox also out on monoplane 219.

On Friday, Lieut. Roupell on 286 with Mr. Jockney. Lieut. Conran on 203, giving his brother a joy ride for 20 mins.

Last Monday Lieut. Roupell was on 286 H. Farman with Lieut. Carmichael as passenger. Lieut. Wadham out on the Avro 289 for one hour, finishing with a spiral from 4,000 ft. Capt. Allen twice on BE 203, and Lieut. Stanford, Lieut. Conran on Avro 288 made a fine flight of 2¼ hours, also one of 45 mins., 1,200 ft. Capt. Allen on BE 203, Lieut Wadham on Avro 289, flew over to Larkhill to observe Air-Mechanic Pratt pass his certificate tests. Lieut. Roupell, with Air-Mechanic Aylen as passenger, on 286, tripped over to Devizes, flying for 45 mins. at 2,000 ft. Lieut. Wadham on Avro 289, 25 mins. By a slip it was stated in last week's notes that Air-Mechanic Powell was out on H. Farman 274. It should have read that he was receiving instruction on the machine.

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ARMCHAIR REFLECTIONS.

By THE DREAMER.

The Elusive Mr. Fairbairn.

I HAVE not yet arrived at the Vichy age, but I am old enough to cease to take any interest in the annual "big gooseberry" that comes merrily along in due season. Nevertheless, I was greatly agitated a short time ago, to hear about a very wonderful machine, with a conning tower, all complete with an engine of goodness knows what horse-power, that had been flying about at Brooklands and Hendon—places I visit on occasion—and I had known nothing whatever about it.

Ever since the magnificent offer of the *Daily Mail* to the first pilot to cross between England and America, I have been puzzling my poor brain by mentally weighing up the few machines and pilots of which I happen to have heard during this last year or two, and wondering which and who would be the winner. Had I but known it (and I admit in all shame it was my business to have known) here, right under my nose, was the very machine to do the trick, and once more is the prophetic Jules Verne realised. Here is (or rather was) the "Clipper of the Clouds."

I know you will say "The Clipper of the Clouds" has been realised before in the shape of airships. Nothing of the kind. Jules Verne's ship, was a real ship, that could either float on the water or fly at command, exactly as this one did; and did not rely on gas, exactly as this one did. I am given to understand that this transatlantic leviathan is somewhere in the neighbourhood of the Swin Middle buoy, but I don't believe it. A man of Mr. Fairbairn's calibre is much too clever to let people know just where he has submerged his machine: there to await the moment, when at the will of its master it shall rise like Venus from the wave, and sail away to glory and a fat cheque. And what a superb idea, this hiding at the bottom of the sea. No doubt people were beginning to notice something different about this machine. Were beginning to want to know who made the 350 h.p. engine, so they could get one like it. Wanted to see the mechanism that worked the opening and closing of the airtight lid. Wanted, in fact, to go pushing their noses in where they were not wanted; until this clever man, who had so successfully hidden his secret for so long from the vulgar gaze, must needs, like the unhappy mother in the melodrama, steal his child from its cradle, and pass out into the night—to go whither? Who knows?—None but the man in the boat.

And Mr. Fairbairn himself—where is he? The first news we had was to the effect that the man in the boat had had some trouble to extricate his friend from the forward barbette, and that he had only just managed to get the roof off when, the gasoline pumps having pumped the tanks full of water-ballast, the whole contraption sank beneath the waves.

But Mr. Fairbairn was not lost. He had, with his no doubt usual foresight, provided himself with a floating-suit; and when he had seen his craft comfortably at rest on her bed of sand, he just bubblewubbled up to the surface and swam ashore, his friend evidently in the meantime having gone home to mourn. And now I am all on thorns as to when he will turn up again. He must, of course, give due notice to the authorities before commencing his Anglo-American trip, and I am greatly afraid this will be the first I shall hear of him.

Is it Mine to Reason Why?

I have before me the programme of the fête of flowers and aviation at Hendon on June 25th last, and as an artistic production it leaves nothing to be desired. The cover is a wealth of red, white and green, and depicts a battle royal of flowers in mid air, by ladies and gentlemen in machines, the exact make of which does not seem to be familiar, but they look very pretty, and any stranger seeing this cover would wish he had been there to see the actual performance. I see, too, that the proceeds were to be devoted to charity, and I hope charity gained very considerably as a result.

The inside pages are of good art paper, and well represented from the "space merchant's" point of view, which with the sixpence charged for the book should have helped to swell the grand total to some extent.

Being "Press" I got my copy for nothing, and I know I am looking a gift horse in the mouth, but I am essentially a grumbler.

I have been told since that the decorated procession of motor cars was something of an outside nature got up by somebody else, and not really directly connected with the London Aerodrome people, although it was so worked as to fit in with the day's proceedings, but on page 10 of the programme I find the announcement set out in cold type, and headed London Aerodrome, Hendon, saying that the procession would "pass Marble Arch House on their way to Hendon about 10.15 a.m." I wanted to

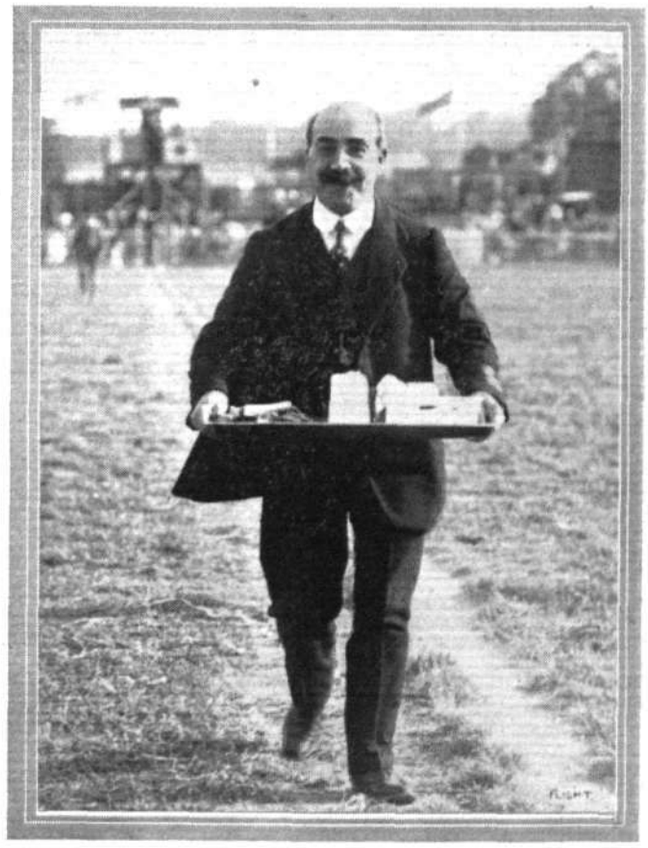
see that procession very badly, and so apparently did some thousands of others, who lined the streets all the way from Marble Arch to past the Crown at Cricklewood, and stood there till well past noon, but that procession, as a procession, did not mature. Certainly I did see one or two cars fly past at intervals of, perhaps, half an hour, but most of the exhibitors, after parading for *entente cordiale* purposes, went home to lunch, and came on to the aerodrome at their convenience later in the day.

Where prizes are given in a competition of this description, and the event is advertised as part of the day's proceedings, for which people were asked to pay extra admission fees, it should have been made part of the contract that competing cars must form part of the procession and go to Hendon with the others, and at the time arranged. The cars were only one side of the business; on the other there were the people who paid up to ten shillings and got there at ten in the morning prepared to enjoy themselves, and found nothing doing. The wind was not kind on Wednesday, and prevented air races and anything of that kind being held; all the more reason why the powers that be should have strained every sinew to have seen that all else was done to amuse the people. To be asked to give ten shillings to charity is one thing, and to sit in an aerodrome and see nothing for hours on end, is quite another. The people who visit Hendon seem to me quite the most patient in the whole world, but there is sometimes to be seen by a keen observer, a sort of shifting uneasiness, as though they had had just about enough of it, which does not help to popularise flying as a spectacular performance. But to get back to our programme. Page eleven says:—"Noon to 12.30. Arrival of procession of motor cars." They did not arrive, at least not in the way intended; but, allowing that this was outside the jurisdiction of the London Aerodrome, it next says: "12.30 to 1 p.m. Judging of decorated aeroplanes." Honestly, I didn't see it. I saw one poor little plane out there all by itself, looking very lonely in its gaudy display of flowers as it timidly faced the spectators, and for the life of me I could not help thinking of a late homecomer from a fancy dress ball, surprised by daylight. Later it was joined by first one and then another of its fellow-sufferers, till there were quite four or five of them all told. There may have been judging, I did not see it, in any case it would not take long or cause much excitement.

The speed handicap and the team race, could not of course take place owing to the wind. Somewhere about six o'clock, the decorated cars (which had somehow managed to arrive one at a time in the meantime) lurched up past the far enclosures, like a flotilla of torpedo boats in a storm. And I think this was about all those at that end saw for their money. The battle of flowers took place round number one pylon, and nobody was struck, either by a flower or the extravagance of the display. The one bright incident during the day was the arrival of Slack from Paris in a gale of wind, but this was an extra, and not on the programme of events.

In justification I must say that Mr. Gates and Captain Tyrer worked like Trojans, but it seemed to me there was a fearful want of organisation, and that with the material at hand much better could have been made of it. The procession of Motor Cars along Edgware Road, should undoubtedly have taken place. It was advertised to do so and people expected to see it. Besides which, it would have gone far towards drawing people to the aerodrome who had not thought previously of going, when they saw there was something toward. The people in the far enclosures paid their money to see something, even as those in the better parts. Their idea of decorated aeroplanes was not, I am sure, that of two or three machines drawn up opposite the committee enclosure half a mile away. They wanted to see them for themselves, and they should have been taxied up in procession so that all might see. The Battle of Flowers was a good idea. And here is just a little point on which I am not quite sure—I suppose those who wanted to take part in this fun would be expected to supply their own flowers. It was hardly to be expected that the aerodrome people could supply flowers to all and sundry. But here is the point—this Battle of Flowers was one of the things that visitors were asked to pay an extra admission fee to see, and they had every right to see it. Well, practically speaking, there were no flowers. Very few, I think, brought flowers with them, and although there was a good show of them for sale out near the pylon hardly anybody seemed to buy them, though I saw many inquiries, and I can only suppose that the price was prohibitive, though I do not know. When visitors come four and five at a time in cars it means a goodly sum in admission fees, and a few pounds spent in flowers and distributed round the cars would have created a good feeling and have allowed the battle to have really taken place.

Honestly, I do not think the majority of people saw much, and I am afraid many were not satisfied. Popularity requires great efforts to attain, and having been attained requires even more to sustain. It is very unstable, and, failing great care, slides almost imperceptibly away. I am really sorry. It would be a thousand pities, not to say a calamity.

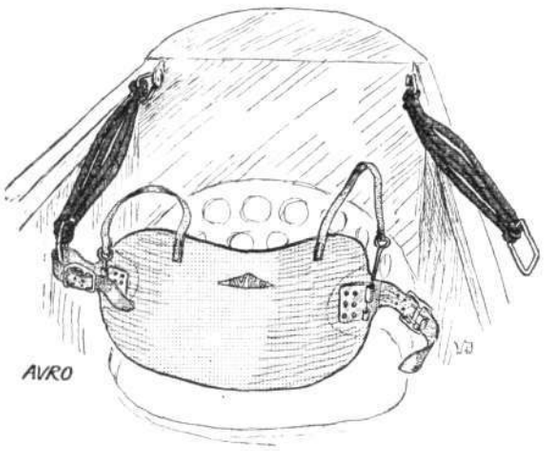


"Flight" Copyright.

AT HENDON AERODROME.—Reynolds, the popular timekeeper, takes the cake—and tea—across to another co-worker between the racing.

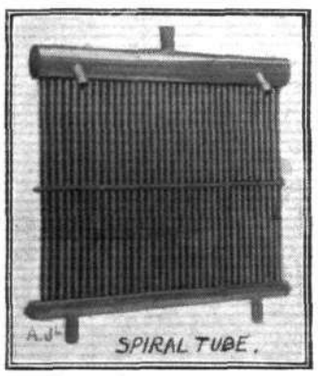
SOME AVIATION ACCESSORIES.

IN addition to producing the world-famous Avro biplanes and hydro-aeroplanes, Messrs. A. V. Roe and Co., Ltd., of Manchester, also supply propellers and numerous accessories for aerial work. Among the latter is a very efficient safety-belt for aviators, and, as can be seen from our sketch of one of the latest and improved pattern, it bears the stamp of having been designed by practical people. One special feature is that the central portion, which is made of strong leather, is very deep, so that, in the case of a sudden shock, the belt is less likely to cause injury than would a narrow belt. Attached to this central part of the belt are two adjustable straps, which are connected to two elastic members by being looped through a ring and secured by a cotter-pin as shown. The other end of the elastic



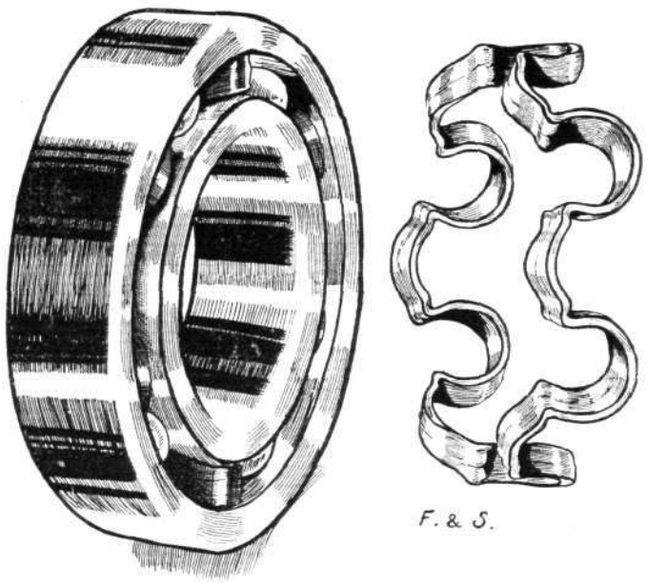
strands are attached to some convenient part of the aeroplane. The little cotter-pins are attached by small straps to the belt, and all that it is necessary for the aviator to do when he requires to release himself is to pull either one or the other of the straps, and so withdraw the respective pin, thus disconnecting the belt from the elastic cables. As previously mentioned, the loop-straps are adjustable, so that the belt can be made to suit varying requirements. A rather good point about this device consists of the fact that, as the aviator has to get into the belt by the use of the release arrangement, he always knows that it is in order. Furthermore, the belt can be released on either the left-hand or right-hand side.

PERHAPS the predominating factor in the design of most parts and fittings for aeroplanes is lightness, but there are certain parts in which strength and rigidity are most important and the problem of combining these three qualities is a problem that taxes the ingenuity of many. One example of this is afforded by the radiators which are used in conjunction with water-cooled engines. Necessarily of delicate construction, they have at the same time to be immune from any ill effects caused by vibration—of which there is no small amount in most aircraft. One of the earliest aero-radiators that met with success from the start (1909) is that designed by the Spiral Tube and Components Co., of 61, Northdown Street, London, N. The constructional features of this radiator are that it is built up of a series of solid-drawn tubes fitted top and bottom into headers, and that each tube has a corrugated ribbon wound edgewise around it in the form of a spiral. One of these radiators is shown in the accompanying illustration.



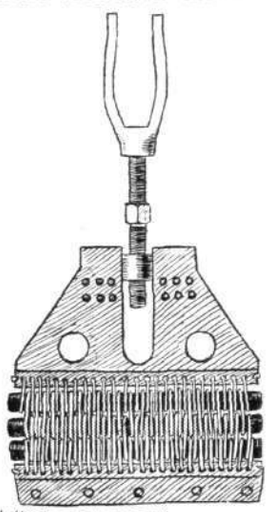
SINCE ball bearings first came into practical use, vast improvements have been effected both in their design and manufacture, and varied are the types of machinery in which they have been successfully employed. The aviation motor, running, as it does, at great speeds and under varying loads, is one of the types which have benefited by the use of ball bearings, and in perhaps no other branch of motor engineering is the question of reliability more important. Prominent among ball bearings, and enjoying a reputation for durability and high-class workmanship, are the F. and S., for which the sole concessionaires for Great Britain and the Colonies are the Tormo Manufacturing Co., of 67-68, Bunhill Row, London, E.C.

The latest type F. and S. radial ball bearings are illustrated by the accompanying sketches, which show the general design. A very interesting detail is the ball cage or guide ring, which prevents the balls from touching one another. This cage is made in one piece, stamped out of a single ring, and it has taken the firm years of experimenting to find the best form of ball cage. A special chrome steel is the material used in these ball bearings; the rings



are hardened and oil treated by a special process, each ring being tested in two different ways. An idea of the care with which they are made can be gained from the fact that the balls are made exact to size within $\frac{1}{1000}$th of a millimetre. Moreover, in these bearings larger balls are fitted size for size, thus giving the bearings a great load capacity. The balls are inserted in the races through a channel slightly smaller than the diameter of the balls and led spirally to the race in order to obtain a better closure. Each bearing is tested before leaving the factory, and if the oscillations, which cannot entirely be avoided, exceed a certain per cent., the bearing is sent back, either to be re-ground or scrapped as useless, according to the amount of oscillation. It will easily be understood that after such care in the manufacture why these ball bearings give such satisfaction, and they are now fitted as standard in several well-known makes of engines, such as the Gnome, Austro-Daimler, and others.

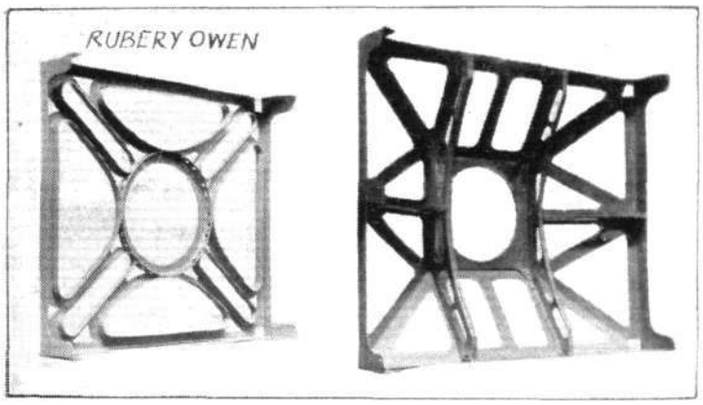
A SOMEWHAT novel form of rubber shock absorber is shown in the sketch given herewith. It is the invention of Mr. F. W. Lanchester—a name well known to our readers in connection with aviation—and is peculiar in that the rubber members, three in number, are subjected to compression and shearing stresses instead of a direct tension. It is claimed that with the latter systems—in tension—the extension for increments of load increases more rapidly than the load causing the extension, but with the device in question the reverse is the case, which is generally desirable in practice. Our illustration gives a clear idea of the general arrangement, but we might add that the rubber members are connected by means of aluminium links. By varying the length and number of the rubber rods, any desired strength and extension may be obtained. These absorbers are supplied by Messrs. White and Thompson, Ltd., of Middleton, Bognor.



IT would seem that there is not a purpose to which "Pegamoid" cannot be applied, and, anyway, it is hardly necessary for us to remind our readers that Messrs. New Pegamoid Ltd., of 134, Queen Victoria Street, London, E.C., are makers of fabrics for aeroplanes, for wherever one or two machines are gathered together, there is almost certain to be seen this important accessory, bearing the magic word. The fabric can be had in a variety of strengths and qualities, and can also be supplied coloured if desired. It may be

of some interest to mention that this firm have been experimenting with a special dope for use on untreated fabrics, tightening and giving the latter a smooth waterproof coating. They have been quite satisfied with the results of these experiments, and have, therefore, placed the dope on the market.

THERE is no doubt that welded and pressed steel work, when done by those who know how, lends itself very well to aeroplane work, and it is not surprising therefore to know that a by no means unimportant branch of the business of Messrs. Rubery Owen and Co., of Darlaston, South Staffs, who are known the world over as specialists in this branch of metal work, is that devoted to fittings for aeroplanes and aircraft. Besides being strong and light, the

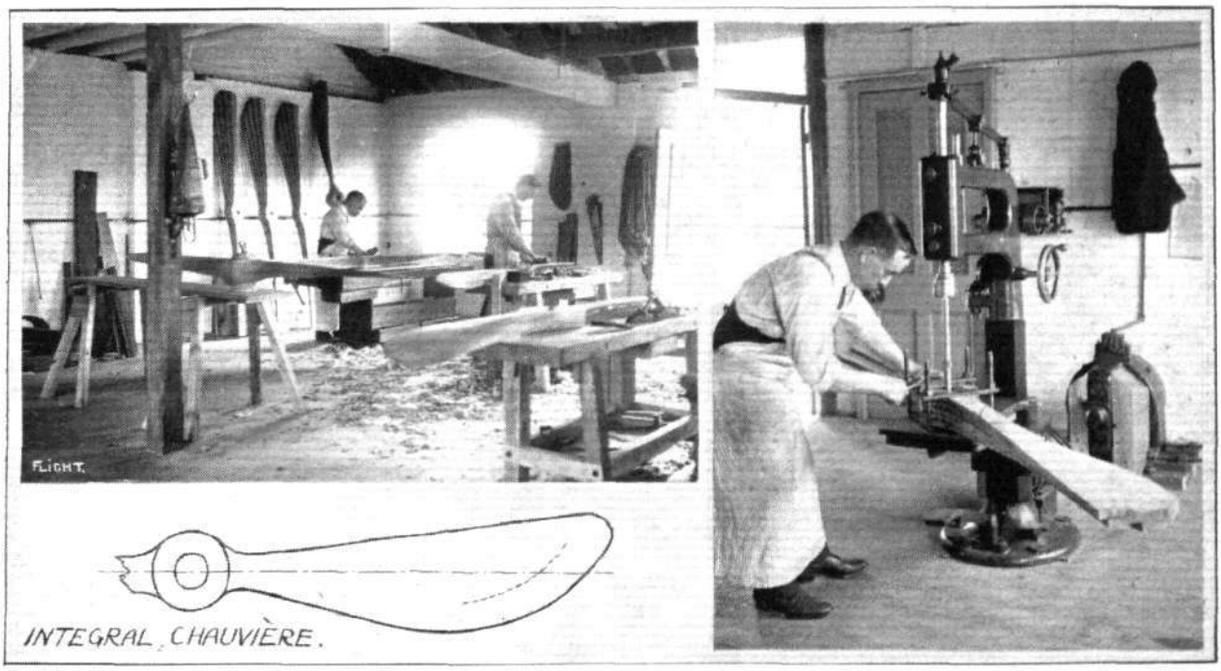


use of pressed or welded steel will often greatly simplify construction. As an example of the work executed by this firm, we show herewith two pressed and welded steel engine mountings, such as would be employed for use with Gnome engines. It only remains for us to add that Messrs. Rubery Owen undertake to execute almost any work of this kind that may be submitted to them.

THERE are few aeroplane records which have been made since that historic Sunday, July 25th, 1909, when M. Blériot flew across the Channel, in which the Chauvière Integral Propellers have not played a part, and so they have steadily built up a reputation placing them with the best in the front rank. It is with some satisfaction therefore, that we learn that these propellers are now being made in this country by British labour. Up to recently M. Chauvière has been represented in this country solely by his office at 307, Euston Road, London, N.W., but lately some temporary workshops have been secured at Kentish Town where Integral propellers will be made and in the near future it is intended to establish a large factory at some convenient place. In the accompanying illustrations are seen a couple of views in the new workshops, but it should be pointed out that at the time of our visit the works were not in full operation. It will be remembered that the principal feature of the Chauvière lies in the shape of the blades, as illustrated by the accompanying diagram. The cutting edges are curved, the rear edges being straight, the ultimate effect of which is to allow a part of the air-pressure to be brought behind the axis of the propeller, *i.e.*, on the rear part of the blades, thereby avoiding deformation which tends to alter the pitch—a fault with many badly-designed propellers. The Integral propellers are built up of layers of picked best quality French walnut glued together with a special glue invented by M. Chauvière. Great precautions are taken to ensure wood used being of exactly the same density in its entire length. When the propeller is properly formed, a great deal of attention is given to the balancing of the same by means of another invention of M. Chauvière, a special form of balancing mechanism which registers the slightest defect. They have recently placed on the market a propeller with a variable pitch and metallic boss, a system particularly suitable for testing or experimenting. In 1908, they patented their metal-tipped propellers for hydro-aeroplane work, and now that the latter type of aircraft is well established, the true value of these propellers has already made itself apparent.

ALTHOUGH there are several firms supplying the wants of aeroplane constructors so far as wood as a raw material is concerned, there are only a very few who make a speciality of not only obtaining the wood itself, but also undertaking to turn out the finished article—such as ribs, skids, struts, &c.—to the designer's own specifications. Messrs. R. Cattle and Co., of 27, Wybert Street, Stanhope Street, London, N.W., a firm of wood-workers of some 40 years' standing, and well known in the picture-frame world for their turned-from-the solid oval frames, is one of the very few exceptions in this connection. They have only just moved into the above premises, which are much larger than their old works, the ground floor itself covering 16 000 sq. ft. They have a very fine plant, most of the machinery having been designed and constructed by themselves. As regards the work itself, we were particularly struck with the excellent finish of that which we saw on the occasion of our visit to the factory some few weeks back. This is not surprising, however, when it is stated that nearly every employee has been with Mr. Cattle almost from the start, and each man has his own particular class of work, and that only, so each man is an expert at his own job. A point Mr. Cattle wishes to emphasize is that all work is carried out in confidence.

AEROPLANE designers are now giving much more attention to the comfort of the pilot and passenger by providing better protection from the elements. Important as this is, it more often than not has the drawback of obscuring the view, in which case the only remedy is to fit windows. Glass is by no means suitable for this purpose, and celluloid, though light, is extremely dangerous on account of its inflammability. The Cellon Co., of 49, Queen Victoria Street, London, E.C., well known to our readers for their dope for fabrics, manufacture a transparent material that has all the advantages of ordinary celluloid without the danger referred to



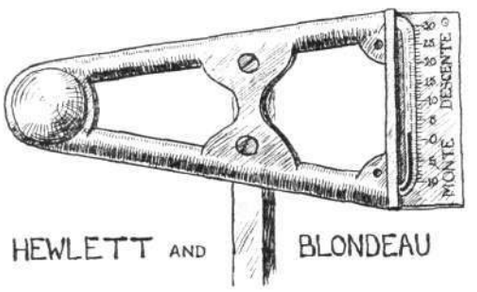
above. The main ingredient is acetyl-cellulose, and it is made in the form of large blocks from which thin sheets are planed, and these are non-flammable and very transparent. We should add that this material is already extensively used, as is the Cellon dope, and full particulars and prices can be obtained on applying to the Cellon Co.

THERE is a particular aptness, from the aviator's point of view, in the old adage which reminds us that our life hangs on a single thread—in fact it would serve as a fitting motto for pilots—when it is remembered what an important part wires play in the construction of an aeroplane. It may seem quite a simple matter to use wires in this way, but there are many important factors governing the proper selection of them that have to be considered in addition to the more obvious ones of size, strength, quality and material. This being the case, it will be seen that it would be to the designer's advantage if he were to consult those who have specialized in wire and all appertaining to it. A firm who have considerable experience on this subject will be found in Messrs. Bullivant and Co., Ltd., of 72, Mark Lane, London, E.C. Everything in the way of wire is supplied by this firm, but their speciality for aviators is flexible steel wire-stranded cords (tinned). The wire of which these are composed is drawn from the highest quality material and to the highest possible strains consistent with reliability and maximum flexibility. The diameters have been brought down to the smallest possible, to reduce wind resistance.

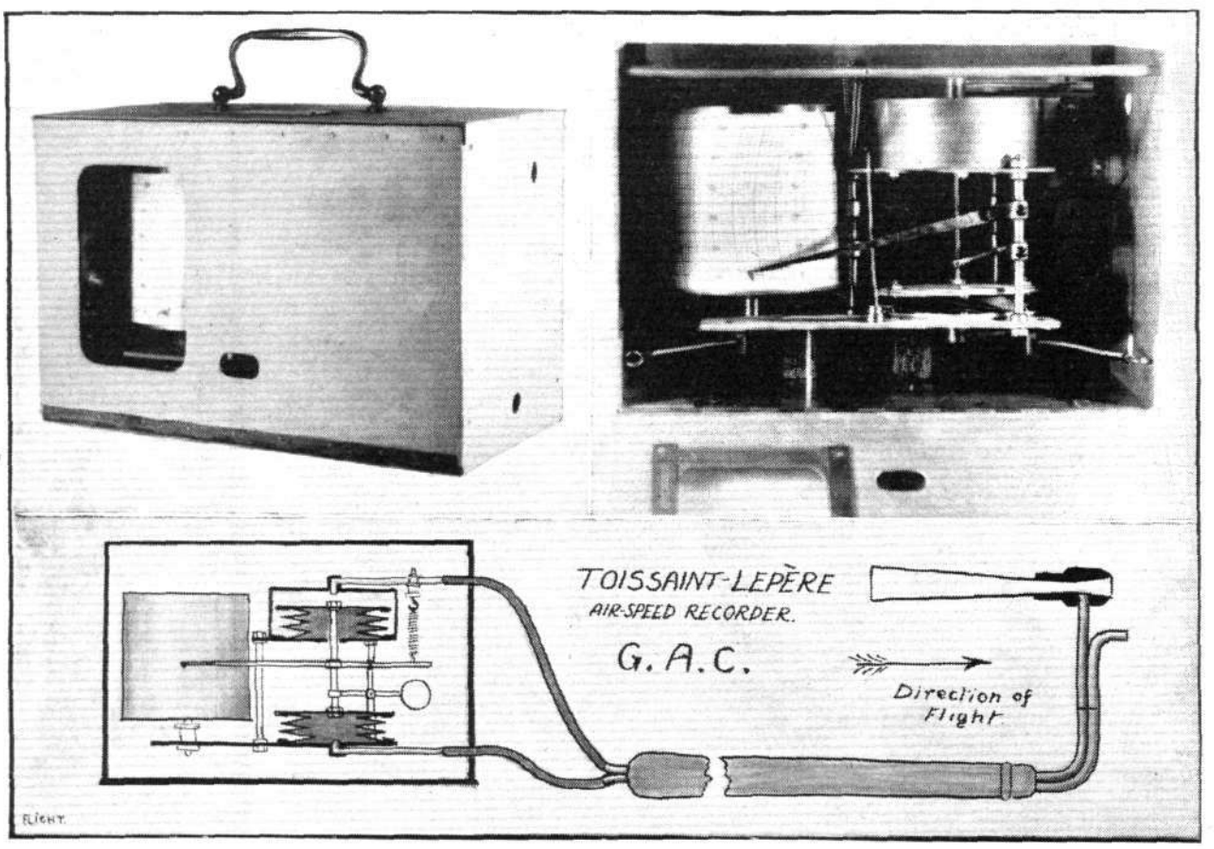
With regard to extension, from actual tests made of Bullivant's cords by Messrs. David Kirkaldy and Son, at their testing house, it has been ascertained that the ultimate extension at the *breaking* load of the various cords range as between 1 per cent. and 3 per cent., and that at a load equal to about one-half of the ultimate stress the extension has only been ·58 per cent.

So far no one has designed an instrument that will indicate the speed of an aeroplane as a *speedometer* does on an automobile. He who does should make a fortune. Instruments indicating the air-speed, or the speed relative to the wind, are the nearest approach to the aero-speedometer that we have at present. With these instruments, a knowledge of the speed and direction of the wind is necessary to ascertain the over-land speed. The latest instrument of this kind, which has, we understand, just successfully emerged from its experimental trials in France, is the Toissaint-Lepere patent relative speed-recorder, the British agents for which are Messrs. The General Aviation Contractors, Ltd., of 30, Regent Street, London, W. The features claimed for this instrument are lightness, simplicity, and reliability. The mechanism, which is shown in the accompanying illustration, is mounted in an aluminium or wood case by spring suspension. Its operation is as follows: mounted on some suitable part of the aircraft, away from propeller draught, is a Venturi conducting-tube and a Pitot tube. The latter transmits air pressure through tubing to the instrument, entering a bellows-like chamber, which is connected by a rod to a similar one immediately above it. This second bellows is contained within an air-tight casing which is in communication with the Venturi tube. The suction caused by the latter, and the pressure from the Pitot tube give rise to a movement on the part of both bellows which is proportional to the air-speed of the aeroplane or dirigible. By connecting the bellows' rod to a pointer, which is made to move over a suitable graduated revolving chart, a record of the air-speed is thus obtained. The price of this instrument, in an aluminium case, is £36, or, in a wood case, £32. We would remind our readers that Messrs. "G. A. C." also supply other instruments, and the famous Roold helmets and clothing.

TO the aviator an inclinometer is a truly useful instrument, and the one which we show in the accompanying illustration is supplied by Messrs. Hewlett and Blondeau, of Omnia Works, Vardens Road, Clapham Junction, London, S.W. Besides being light, strong and simple, it has the advantage over most other types,

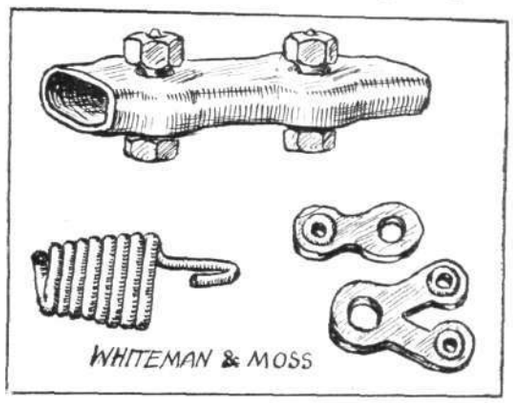


which have to be fitted at the pilot's feet, in that it can be placed in an upright position, so that the angle of climb or of descent can be ascertained without having to look downwards. Being of the spirit-level variety, where the level of a liquid in a glass tube is the medium employed for indicating the inclination, there is no mechanism to get out of order, and once fitted requires no further attention. Two patterns of this inclinometer are made, one having



the indicating scale as shown in the sketch, so that the instrument can be fitted at the side of the pilot, and the other having the scale so that it can be viewed when the instrument is end on, right in front. The price of these inclinometers is 25*s.* each.

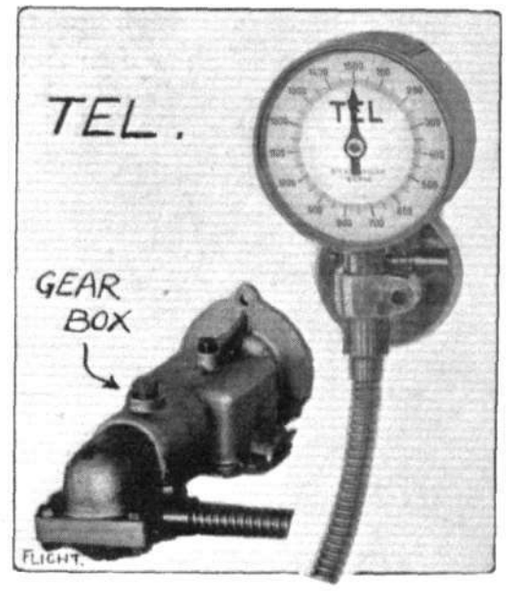
A "UNIVERSAL PROVIDER" of aero fittings is certainly a term which might be applied to the firm of Messrs. Whiteman and Moss, of 15, Bateman Street, Dean Street, London, W., and the magnitude of their business can only be realised when one considers the very small minority of fittings used in aeroplane construction that approach anything like standardisation. The special requirements of each aeroplane-designer have to be met independently—one wants eye-bolts of this shape, the other wants a different shape, and so on. From the early days of aviation in this country Messrs. Whiteman and Moss have built up a reputation for



supplying *any* want within reason, so that to-day, "W. and M." fittings are used nearly everywhere—the Admiralty and War Office being by no means small customers. There are, of course, a large number of standard fittings, such as wire-strainers, eye-bolts, bolts and nuts, wire, &c., of which this firm keep a large and varied stock, and we show in the accompanying sketch, four fittings that may be of interest. The first of these is a cable clamp, and speaks for itself, two coned bolts and nuts affording a powerful grip on the cable. Underneath, on the left is a wire ferrule for the ends of elastic shock absorbers, &c. Next are two eye-plates, the feature of which lies in the copper bushes which give a greater life to the wire.

"EMAILLITE" as a dope needs no introduction to our readers, but we might remind them of the two special grades No. 4 and No. 6, which are claimed to possess several advantages from the point of view of the British manufacturer; we also take this opportunity of bringing to the notice of our readers "Emaillite" soap, of which we can speak very highly. It is intended for use when the hands are exceptionally grimy after working at an engine, or the like. All dirt is removed with remarkable rapidity, and without injuring the skin; in fact, this soap is antiseptic, improving rather than harming, especially in the case of cuts or scratches. It is made up in squeeze-out tubes, and is supplied by the British Emaillite Co., Ltd., of 30, Regent Street, London, S.W.

AN engine-revolution indicator is, perhaps, one of the most important instruments required on an aeroplane or dirigible, and it is a *sine qua non* that it should be reliable and accurate. An instrument possessing both these qualities is the "Tel," manufactured by the Haslar Co., of 26, Victoria Street, Westminster, London, S.W., which, as we have mentioned in this journal before, is an adaption of an instrument which has been in use some years now



on locomotives and tramcars. The main feature of this instrument is that the indicating hand is re-set every second if the speed is not absolutely constant, a correct indication of the speed of the engine or propeller being thus obtained at all times. The action is quite different from other speed indicating devices of the centrifugal force or magnetic types, and we hope shortly to deal fully with the details of its working. When fitted to a slow-running engine, the instrument can be connected direct to the engine, but in the case of high-speed engines, a gear-box has to be employed, the design of which varies according to the make of the engine. That shown in our illustration is for a Gnome engine installation. Experiments are being made with a view to adapting the "Tel" instrument for use as an aero-speedometer, and we hope to have something further to say on this matter shortly.

FATAL ACCIDENT AT SHOREHAM.

A PARTICULARLY distressing accident occurred at Shoreham-by-Sea, on Sunday evening last, when Mr. Robert N. Wight, a previous Vickers pilot, ascended in the 60 E.N.V. Avro, apparently with the object of doing straights, on the instruction of Mr. Arthur E. Geere. This was the first time Wight had ever piloted an Avro, and Geere impressed upon him the importance of not doing more than straights. He started off rather badly, but climbed very rapidly. Whilst climbing, the engine misfired a good deal, and it appeared as if Wight jerked the machine up. Reaching the end of the 'drome at about 100 ft., he banked to the left at a great angle, and then made fast speed down wind. Again banking to the left just before reaching the sheds he apparently intended to land, but evidently changed his mind at the last minute, and turned again right out of the aerodrome. He was almost over New Salts Farm, when he made a left-hand turn at an angle of 45 degrees, and then it was that the 'bus side-slipped and nose-dived absolutely vertically into Mr. F. W. Trott's garden. After hitting the ground, the petrol tank burst and broke into flames. A rush was made from the 'drome, and the first few arrivals made a plucky endeavour to put the fire out. Mr. A. Geere attempted to get Wight out, but, unfortunately, he was pinned in by his feet becoming entangled in a wire. This was subsequently cut, but by that time Wight was very much burnt. He was conveyed to the Sussex County Hospital, where he died later in the evening.

At the inquest on Monday, Geere said that the engine was running sufficiently well to do straights, and it was entirely contrary to instructions that Wight attempted even circuits, let alone to go outside the aerodrome. He told deceased to do one straight and then taxi back to report on the behaviour of the 'bus, and it was quite a surprise to him to see Wight attempt a circuit. After taking evidence from Mr. Goodbarn, one of the many people who witnessed the fall, and from Mr. Watts, house surgeon at the hospital, the jury returned a verdict of accidental death brought on by heart-failure following shock.

The above is an accurate account supplied by a FLIGHT correspondent who witnessed the whole incident, and was one of the first on the scene of the accident.

AERONAUTICAL SOCIETY OF GREAT BRITAIN.

Official Notices.

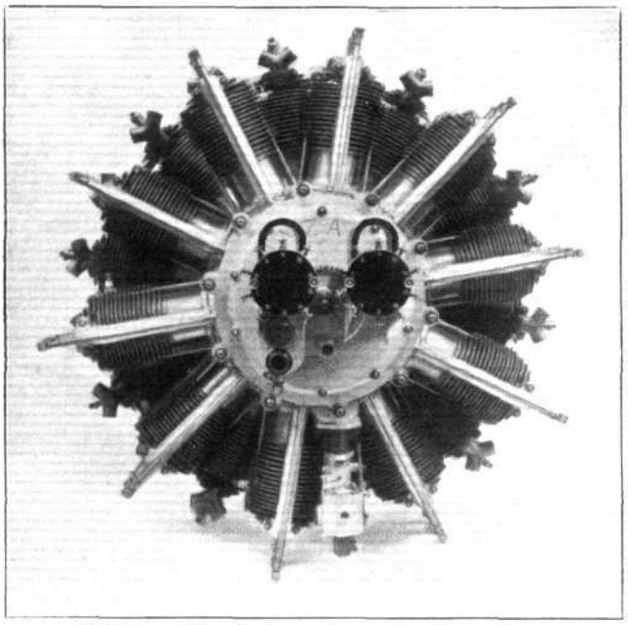
Election of Associate Fellows.—As a result of the ballot for Associate Fellowship, the following have been duly elected Associate Fellows of the Aeronautical Society: R. O. Boswall, G. H. Challenger, E. H. Clift, H. Coanda, L. Coatalen, S. F. Cody, Lieut. R. Gregory, E. C. Gordon England, E. H. Hankin, M.A., Brig.-Gen. D. Henderson, J. L. Hodgson, Capt. C. H. Ley, Lieut. C. J. L'Estrange Malone, R.N., J. H. Neal, J. D. North, Capt. Godfrey Paine, R.N., R. K. Pierson, Lieut. C. J. Porte, Com. C. R. Samson, Dr. T. E. Stanton, and Maj. F. H. Sykes.

BERTRAM G. COOPER, Secretary.

ANZANI ENGINES AND THE NEW 200 H.P. MODEL.

THE rapid development of the Anzani aero engine has been both interesting and remarkable, starting as it did with the 3-cylinder motor with which Blériot flew the Channel, on July 25th, 1909, and culminating in the latest production, which is a 20-cylinder engine rated at 200 h.p.

Intermediate types have been produced in plenty, but the mere citation of these two extremes is sufficient evidence of the administrative initiative at the Anzani works. The first of these 200 h.p. engines has been built and tested, and is already on its way to its

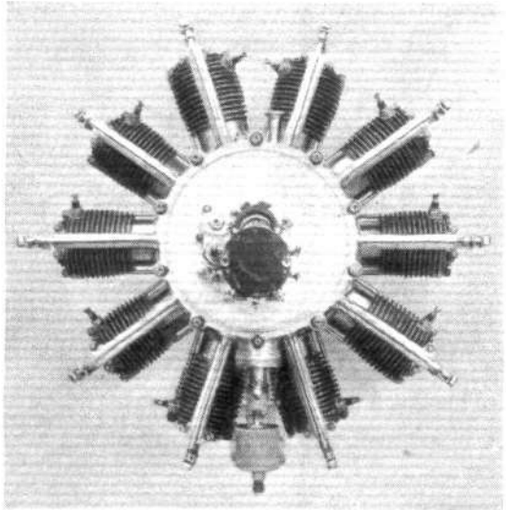


200 h.p. 20-cyl. type Anzani.—Rear view.

purchaser in America, where it is to do work on a hydro-aeroplane.

This engine consists of four groups of five radial cylinders, the groups being staggered so as to dispose all the cylinders at equal angular intervals round the axis of the crank-shaft. In a circle there are 360 degrees, consequently the angle between one cylinder and the next is 18 degrees.

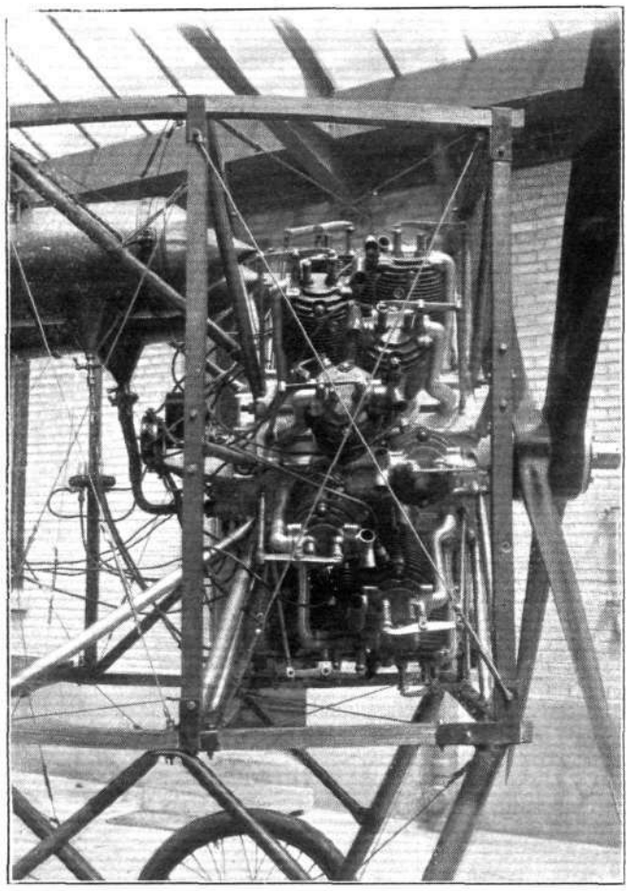
The cylinders have a bore and stroke of 105 mm. by 140 mm., and develop 200 h.p. at 1,200 r.p.m. A Zenith carburettor and Gibaud magneto form standard fittings. The weight of the engine complete is 572 lbs., which represents 2·86 lbs. per h.p. on a basis of 200 h.p.



70-80 and 100-110 h.p. 10-cyl. Anzani types.—Rear view.

The cylinders are of cast iron, and are ribbed for air-cooling. Long bolts reaching to the cylinder-heads fasten the cylinders to the crank-chamber.

The crank-chamber itself is in three parts, consisting of a central drum and two end plates. The valve-gear for the first and second groups of cylinders is fitted in front, while that for the third and fourth groups is arranged behind the engine. It is only the exhaust-valves that are operated mechanically, the inlet-valves work atmospherically, being opened by the suction of the engine and closed by the valve springs. Radial induction pipes communicate from the valve chambers in the cylinder heads to a central mixing

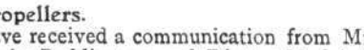


200 h.p. 20-cyl. type Anzani.—Side view, mounted on testing chassis.

chamber cast in the crank chamber. There is a mixing chamber at each end of the engine, and each mixing chamber is supplied independently by a separate carburettor. The throttle controls, however, are operated in unison.

Two high-tension magnetos are similarly required for the ignition of the 20 cylinders. Lubrication is effected by a pump, which forces oil under pressure through the hollow crank-shaft.

The other Anzani models now current include the 3-cyl. 30 h.p. motor, with a bore and stroke of 105 by 120 mm., which develops its full power at 1,300 r.p.m., and weighs 120 lbs. The new 6-cyl. 40-45 h.p., with a bore and stroke of 90 by 120 mm., which develops its full power at 1,300 r.p.m., and weighs 154 lbs. The 6-cyl. 50-60 h.p. engine, with a bore and stroke of 105 by 120 mm., which develops its full power at 1,300 r.p.m., and weighs 200 lbs. This engine is a composite group of two of the 3-cyl. 30 h.p. models, but designed, of course, as one engine. The new 10-cyl. 80 h.p. engine, with a bore and stroke of 90 by 130 mm., which develops its full power at 1,250 r.p.m., and weighs 238 lbs. This design has its ten radial cylinders all in one plane, like the 40-45 h p. 6-cyl model and the 30 h.p. 3-cyl. model. The 10-cyl. 100 h.p. engine, with a bore and stroke of 105 by 140 mm., which develops its full power at 1,200 r.p.m., and weighs 308 lbs. This engine is composed of two groups of five cylinders, and when duplicated constitutes the basis of the design of the new 200 h.p. model already described.



Bonn's Propellers.

WE have received a communication from Mr. C. C. Dutton, a member of the Paddington and District Model Aero Club, to the effect that the propellers used by him at the K. and M.A.A. trials on June 21st, when he secured the club's silver gilt medal, were not "Bonn Invincibles," as inadvertently advertised by them. It will be seen by their advertisement this week, Messrs. J. Bonn & Co., Ltd., acknowledge the error.

BRITISH NOTES OF THE WEEK.

Mr. Grahame-White's Seine—Thames Trip.

A LITTLE more than half an hour after Gilbert had started from Villacoublay on Thursday week, Mr. Claude Grahame-White on a hydro-aeroplane, also of Morane-Saulnier make, started from the Ile de Jatte with London as his objective. He, however, was not taking the direct route, but followed the course of the Seine to Havre, where a stop was made for breakfast. Leaving there at 9.25 a.m. he went on to Boulogne where another stop was made at 10.55. Leaving Boulogne at noon Mr. Grahame-White crossed the Channel and alighted in the harbour at Dover, and had lunch with Mr. A. Guinness on board the latter's yacht. Dover was left at 5.25 p.m., and following the Kentish coast, the Morane hydro. was piloted to the mouth of the Thames, and then taxied over the surface of the river to Greenwich, so as not to violate the Home Office regulations. From Greenwich the machine made its way in the air to Putney, where a fine descent was made on to the river.

Gilbert's Trip to London, and Back to Paris.

ALTHOUGH Gilbert was unable to fly in company with Slack from Paris to London on Wednesday of last week he made the trip on the following day when the weather conditions were much more favourable. Leaving Villacoublay at 5.15 a.m. on his Morane-Saulnier monoplane, which has a Rhone engine and a Chauvière propeller, he flew to Le Crotoy where a stay of three hours was necessary on account of bad weather. He then made a splendid non-stop flight across the Channel to Dover and on to Hendon. From there he hurried as soon as possible by motor car to St. James's Palace in order to deliver to the French President copies of the Parisian morning papers which he had brought with him.

On Sunday afternoon, after giving exhibition flights at Hendon, he left at 4 p.m. on the return journey to Paris. This time he made a non-stop trip to Villacoublay, and landed at his destination at 7.15, thereby just failing to beat Salmet's record time for the London to Paris trip by 3 mins.

Chemet Flies Home from Eastchurch.

AFTER spending some days at Eastchurch, superintending the delivery tests of some Borel hydro-aeroplanes for the Admiralty, Geo. Chemet, accompanied by a friend, left the naval aerodrome on Saturday morning on one of the military two-seater Borel monoplanes. Starting from Eastchurch at 2.45 p.m., Chemet, flying against a strong wind, passed over Dover at 3.10, and crossing the Channel in 18 mins. set a course from Cape Gris Nez to Amiens, where he intended to stay with some friends for the night. After passing Arras, however, he found his fuel supply running short and therefore decided to come down at the La Brayelle aerodrome near Douai, where the Breguet firm have their headquarters. On Sunday morning Chemet flew over to Amiens in an hour and a half, and on Monday a flight of similar duration took him to Chateaufort.

Buc to Dover and Back.

LIEUT. DE LABORDE, who has just finished a course of instruction at the Blériot school at Buc, on Monday flew over the English Channel, landing at Watersend, near Dover. He left at 10 a.m. the following morning on his way home and made a splendid journey *via* Boulogne to Compiegne.

Another Scottish Naval Aviation Centre.

ALTHOUGH it is understood that the Admiralty have abandoned their intention of having a centre of the Royal Flying Corps at Leven, it is hoped that a temporary base will be arranged there for some five or six weeks. It is probable that the permanent centre will be at Port Seton, Musselburgh.

The *Daily Mail* Round Britain Race.

THE latest entry for the *Daily Mail* £5,000 prize for a waterplane race round Great Britain, is Mr. T. O. M. Sopwith, who has entered a tractor biplane similar to those he has built for the Admiralty. Mr. H. G. Hawker will probably pilot the machine.

The Mortimer Singer Balloon Race.

A STRONG wind was blowing on Saturday afternoon when the four balloons taking part in the race for the Mortimer Singer prize left Hurlingham. All the balloons took a southerly direction, but only one continued on its way across the Channel. This was the "Planet," piloted by Mr. C. F. Pollock and carrying Mr. A. Mortimer Singer as passenger. It made a descent about five miles south-west of Rouen and has been declared the winner. The other competitors, the "Dunlop," piloted by Mr. F. K. McClean, with Commander C. R. Samson, R.N., on board; the "Meteor," with Mr. L. H. Mander as pilot and Lieut. A. Borton as passenger, and the "Banshee" with Mr. John Dunville as pilot accompanied by Mrs. Dunville, all descended on the south coast between Bexhill and Hastings.

FOREIGN AVIATION NEWS.

More Blériot Superior Pilots.

ON the 24th ult. at Pau, Sapper Thoret made a 200 kilom. triangular flight for his superior *brevet*, flying over the Pau, Tarbes, Pontoux-sur-Adour course, and Lieut. de Malherbe, the *chef pilote*, at the Blériot military school at Pau, paid a visit to Toulouse.

400 kilom. Trip on a Nieuport.

STARTING from Villacoublay on his 70 h.p. Gnome-Nieuport monoplane on the 27th ult., Sergeant St. Andre flew to Pontlevoy in an hour and a half. After lunch he flew back *via* Gien, Montargis and Orleans, the total distance of the full trip being 400 kiloms.

Long Trips on Breguets.

ON the 27th ult., Lieut. Sensever on his Salmson-engined Breguet went from Villacoublay to Rouen and Dieppe and back, while Sergeant Bridou on a similar machine made one round of the Mailly, Rheims, Sissonne, Chalons, and Mailly course, only one stop being made in the distance of 260 kiloms.

Brindejonc des Moulinais's Return to Paris.

As mentioned in our last issue Brindejonc des Moulinais left St. Petersburg on his return trip to Paris on the 23rd ult. and flew 300 kiloms. to Reval with a stop of some hours at the Matchino aerodrome. Two days later he flew across the Gulf of Finland, taking 4 hrs. 35 mins. for the 400 kiloms., but some part of this time was spent in a stop on the Swedish coast in order to find his whereabouts. Another stage was accomplished on the 29th ult., when leaving Stockholm at 2.30 p.m. he came down at Malmskatt at 4.10 and stayed for 35 mins. He then went on to the Danish capital, where he arrived at 7.18 p.m., the distance from Stockholm being in the nature of 550 kiloms. Leaving Copenhagen on Tuesday he made his way to Hamburg, landing at the Fuhlsbuttel aerodrome there at 7.54 a.m. After a rest of an hour and a half he continued on his way and arrived at the Hague at 12.59 p.m. The last stage of the journey to Paris was completed on Wednesday. A flight of two hours and a quarter took Brindejonc to Compiegne where he was met by his comrades Gilbert, Legagneux and Letort, and they escorted him during the remainder of his flight to Villacoublay. It will be remembered that his machine is a Morane-Saulnier with a 60 h.p. Gnome engine and Chauvière Integral propeller.

Another Promising Dep. Pupil.

ON Saturday, Meneras, one of the pupils sent to the Deperdussin school, at Rheims, by the Comité Nationale, made a flight of an hour and a quarter at a height of 800 metres.

Mailly to St. Cyr on a Zodiac.

LAST Sunday, Pierre Debroutelle, on his Zodiac biplane, returned from Mailly Camp to St. Cyr, taking 3 hrs. for the course, and flying mainly at a height of 1,000 metres through a head wind, blowing about 10 metres per second. On the 24th ult., when he made the trip from St. Cyr to Mailly, the journey only occupied 1 hr. 55 mins.

A French Fatality.

WHILE flying a new machine with which he was unfamiliar at Chalons Camp, on the 26th ult., Foulquier fell from a height of 70 metres and was instantly killed.

Good Cross-Country Work on a Farman.

ACCOMPANIED by Capt. Lucas, Lieut. Lussigny on his M. Farman, on the 23rd ult., started from Buc for Rouen. The aviators were overtaken by a storm when near Vernon and had to land, going on to Rouen the following day. He returned from Rouen to Buc in fine style on the 26th.

Chevillard on a Hydro.

HAVING arranged to give a series of exhibition flights during this week at Enghien, Chevillard flew from Buc to Enghien on Saturday. After flying over Villacoublay and Meudon, he reached the Seine near the Sevres bridge and following the river, he reached Enghien in half an hour, there bringing his H. Farman hydro-aeroplane down on the lake by a "descente piquée à la Chevillard."

M. Giraud Visits Hardelot.

ALTHOUGH the weather was very heavy, M. Etienne Giraud made a splendid trip from Amiens to Hardelot on the 25th ult., the Blériot machine making light of the wind and rain.

A Bathiat Superior Pilot.

ON his Sanchez-Bathiat monoplane last week, Private Robinet did some fine flying to qualify for his superior certificate. On the 24th ult., he went from Mourmelon to Mailly and Sissonne Camps and back to Mourmelon in 3 hrs., and the next day he went from Mourmelon to Villacoublay and back in 2½ hrs.

A Roumanian at Buc.

AT the Blériot school at Buc, on the 25th ult., a young Roumanian sportsman, M. Camarachesco, who has been at the school for some time, made a flight of an hour's duration at a height of 600 metres.

At the Nieuport School.

AT Villacoublay, on the 25th ult., Adjudant Remia made a flight of an hour on his Nieuport, and Roume made a superior *brevet* test over the Villacoublay-Chartres course, and Lieut. Challonge went over to Rouen, while Sergeant St. Andre paid a flying visit to St. Etienne. Sapper Chapier made a round of the course—Villacoublay, Etampes, Malesherbes and back; and Sapper Rolane went to Etampes and back with a passenger. One hour flights were also made by De Neufville, Lartigue, and the Siamese lieutenants, Arwood and Naï Thip.

Flying Round Paris.

ON his M. Farman biplane Lieut. Collard made a trip of about 100 kiloms. on the 24th ult. Starting from Buc he followed the railway round the city, keeping at a height of about 500 metres.

Biarritz to Bordeaux by Guillaux.

FOR some days last week Guillaux was staying at Biarritz, with the intention of making a flight across France for the Pommery Cup, but as there did not appear to be any chance of the weather improving, he decided on Monday to start, and if he found that he could not get on to make a stop at Bordeaux. He got away from Biarritz at 4 a.m., and arrived at Bordeaux at 6.10 a.m. He then continued his journey to Paris by the railway.

Delivering Farmans by Air.

ON Monday three H. Farman machines were delivered at Etampes from Buc, the machines being piloted by Henry Farman, Fischer and Chevillard respectively. Each one carried a passenger.

Another Farman Superior Pilot.

CAPT. BERTIN on his Farman machine on Monday completed his qualifying tests for a superior certificate, flying over the triangular course, Etampes–Vendome–Chateaudun, and for most of the 210 kiloms. keeping at a height of over 1,000 metres.

Another Russian Record.

ON the 21st ult., at the Corps Aerodrome, the giant Sikorsky biplane, with five persons on board, flew for 29 mins. and covered 55 kiloms., round St. Petersburg.

Double Fatality in Belgium.

WHILE Parisot was giving some exhibition flights at Bombaye, near Liege, on the 29th ult., his machine fell from a height of 15 metres on to some spectators who had crowded on to the flying ground. One man was killed instantly and three other people sustained very serious injuries. Parisot was so badly injured in the smash that he died almost immediately.

German Aviators in Switzerland.

DURING a flight from Metz to Constance on Saturday a biplane, with two German officers on board, had to land on account of motor trouble at Beringen, in the Canton of Schaffhausen, where they duly reported themselves to the police.

The Mecklenburg Circuit.

THE first stage of this competition, from Lubeck to Schwerin was taken on the 22nd ult., and of the half a dozen starters, Rosenstein on a Pigeon monoplane made the best time, doing the 55 kiloms. in 36 mins., Schuler on an Ago biplane was second in 37½ mins., and Dick on a Pfiel biplane third in 39 mins. The second stage, back to Lubeck, was made two days later, when the conditions were not quite so good, and the start, as a matter of fact, had to be postponed for half an hour. The distance was 77 kiloms., and 30 kiloms. from Schwerin the competitors had to make a circle over Wismar. The first to finish was again Rosenstein, his time being 55 mins., Cremer on a Fokker monoplane was second in 1 hr. 5 mins., and Schuler third in 1 hr. 30 mins.

Touring Germany in an Aeroplane.

ON the 23rd ult., Lieut. von Detten, who is touring Germany in an aeroplane, arrived at Gesecke, in Westphalia. The next day he continued his journey, but was forced to come down near Hillesheim, and in landing his machine turned over. It was damaged a little, but fortunately the pilot escaped injury.

The Vienna Meeting.

ON the concluding day of the Vienna meeting, the 24th ult., the principal prizes were won by Bathiat, who secured the Duration prize, and by Garros, on his Morane, who covered 100 kiloms. in 40 mins. In this latter event Bielovucic was second, taking 45 mins. for the 100 kiloms.

Russian Army Going Ahead.

DURING the discussion in the Duma on the Russian Army Estimates, the Chief of the General Staff said that during the year since the aviation department in the War Ministry had existed, the number of aircraft had increased tenfold, and the Ministry would not be content until every Army Corps had a detachment of aeroplane scouts. The number of airships owned by the Russian Army had been doubled as quickly as it had been possible, making six in all, and the latest airships were of the most modern type, with machine guns, bomb-dropping apparatus, and wireless telegraphy instruments.

Memorial to Moisant.

TO mark the spot where J. B. Moisant met his death, a memorial is being erected at New Orleans, La., and when it is placed in position the aviator's remains will be buried beneath it. The memorial takes the form of an overturned monoplane, chiselled from a single block of Georgia marble.

The American Memorial to Langley.

AT last the United States is to have an aeronautical laboratory, and it will be a memorial to the work of Langley. After considering the report of a committee specially appointed to go into the matter, the Board of Regents of the Smithsonian Institution, on May 1st last, decided that the laboratory should be organised, and in order to finance the scheme voted $10,000 for the present year and $5,000 annually for the next five years. The laboratory will be directed by a general committee, and the post of recorder has been taken up by Dr. Alfred Zahm.

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AFFILIATED MODEL CLUBS DIARY.

CLUB reports of chief work done will be published monthly for the future. Secretaries' reports, to be included, must reach the Editor on the last Monday in each month.

Aero-Models Assoc. (N. Branch) (25, CHURCH CRESCENT, MUSWELL HILL, N.).

JULY 5TH, inter-club contest with Paddington Ae.C., at Sudbury; July 12th, at Finchley, open r.o.g. duration competition, North London modellists please note; July 19th, r.o.g. speed contest; July 26th, trials for club certificates, also a match *v.* Gospel Oak M.Ae.C. is being arranged. Club notices should have appeared in FLIGHT on June 21st and 28th, but were misdirected, and in consequence, arrived too late for publication. July 17th, committee meeting 7.45 p.m.

Leytonstone and District Aero Club (64, LEYSPRING ROAD).

JULY 5TH, flying near Brickfields. July 6th, at 6.30 a.m., hydro practice, model yacht pond, at 10 a.m., near Brickfields.

N.E. London Model Ae.C. (57, KING SQ., GOSWELL RD., E.C.).

JULY 5TH, flying, Hackney Marshes, 3 p.m.; July 6th, 10 a.m.

Paddington and Districts (77, SWINDERBY ROAD, WEMBLEY).

JULY 5TH.—Inter-club contest with Aero-Models Association at Sudbury, r.o.g. duration. July 12th.—Entries for Paddington Cup close. Applications for entry forms should be made at once.

Reigate, Redhill and District (THE COTTAGE, WOODLANDS AVENUE, REDHILL).

July 5th.—Novices' competition and general flying on Earlswood Common. Flying exhibition at "Frenches," Red Hill, in connection with Men's Own Sports. It is hoped that all members will make a good effort.

The next "Rawson Cup" Competition is to be held in August and tractor monoplanes are to be flown. Conditions: Not under 6 ozs., and loading not less than 6 ozs. to 1 sq. ft., and to be flown on duration. Winner to hold cup for 4 months and to be presented with silver medal. Second to receive bronze medal. The Novices' Competition, July 5th, is for anything rising off ground, not under 5 ozs. Prizes—1st, Winder; 2nd, Set of Parts; 3rd, Rubber.

Wimbledon and District (165, HOLLAND ROAD, W.).

JULY 5TH and 6th, flying as usual.

UNAFFILIATED CLUBS.

Gospel Oak and Districts (5, VICARS ROAD, N.W.).

MEETINGS as usual every week-end during the month.

Manchester Model Ae.C. (14, WARWICK RD. N., OLD TRAFFORD)

TRACTOR hand-launched competition to-day, postponed from last week. Meetings as usual every Saturday and until further notice, on Wednesday evenings, at 6.30 p.m. until dusk, at the Trafford Park Aerodrome.

Scottish Ae.S. ("ROCHELLE," LIMESIDE AVENUE, RUTHERGLEN).

JULY 5TH, hydro-aeroplane demonstration at Whiteinch Pond; 12th, hydros, tractor, &c., demonstration at Maxwell Park; 19th, no meeting (local holiday) 26th, hydro-aeroplane demonstration at Whiteinch Pond.

S. Eastern Model Ae.C. (1, RAILWAY APPROACH, BROCKLEY).

JULY 5TH, flying Woolwich Common, 4.30 to 7.30 p.m. July 6th, Blackheath, 7.30 to 10 a.m.; Grove Park, 10.30 a.m. to 12.45 p.m.; Mitcham, 2.30 to 5.30 p.m. July 12th, Woolwich Common, 4.30 to 7.30 p.m. An impromptu competition will be organised on the last date for duration; tractors will be credited with double their duration. The next quarterly competition (July to Sept.) for the South-Eastern Trophy will be for tractor models weighing not less than 16 ozs. These may be either monoplanes or biplanes, equipped with *one* or *more* tractor screws, and must be capable of rising from the ground entirely under their own power. The *fuselage* must be of the "built-up" variety, and must contain not less than three longitudinal members, which may be enclosed at the option of the competitor. Qualifying flights of 10 secs. off the ground must be made prior to the *official* tests, which will be held on Saturdays, July 26th, August 30th, and September 27th. Competitors may enter one or more models, and an allowance of 10 per cent. will be given on all official durations timed during July, and 5 per cent. allowance will be given during August. Further particulars may be obtained from the hon. sec., Mr. A. B. Clark.

Stony Stratford and District Kite and Model Ae.C. (OLD STRATFORD).

THE last meeting was held at Wolverton on Wednesday, July 2nd, the subject for discussion being "Stability."

Windsor Model and Gliding Club (10, ALMA RD., WINDSOR).

FLYING in the Home Park, on Saturday at 2.30.

Models

Edited by V. E. JOHNSON, M.A.

"Flight" Certificates of Merit.

It is extremely discouraging that we should not, up to now, have found it possible to award more of those certificates. When they were founded, it was hoped that such would have not been without some little value in aiding and helping forward the more scientific side of model aeroplaning. It is with sincere regret that we learn from Mr. Kilshaw (as noted elsewhere), that he can so far find no local encouragement to more useful work. In one respect we are afraid the "sport" of model aeroplaning has done great harm to the art—it has done its best to encourage, and has set a premium on *small* models, and as a consequence has undoubtedly caused what is usually termed "the man in the street," to regard them as "toys"—fit only for boys to play with.

Apart altogether, however, from this side of the question, there must be a considerable number of experiments being carried out in various districts—and it is practical experiments that are so valuable—so much more so than any discussion or argument. During the last quarter of a century, we wonder how many thousands of experiments have been made yet not published, and then all made again at a later date by another person. Because A did not publish his results, B is compelled to waste time in rediscovering them. It will be contended that many of these experiments resulted only in failure, but it is often these results that are of so much value, it is just as important to know what not to do as what to do. Some people do not like recounting their failures, and yet those whose opinions really matter are at once prepared to accord full recognition for the labour involved. Be assured that he who never makes mistakes will never make anything. No one but a poltroon, said a well-known V.C., would ever boast that he was never afraid. This section is not run in order that the model editor may write so many lines per week; which must in course of time become alike wearisome both to the readers and to himself. We make, therefore, a special appeal to our readers to send us brief accounts of any practical experiments they have made; whether the idea resulted in a success or a failure has nothing to do with the matter. Knowledge is bound to be gained from them.

The first floats tried by the writer were ping pong and celluloid balls; they were not a success, but knowledge was gained from the experiments; for instance, it was found that it was much easier to drive these partly immersed balls through the water when they did not revolve than when they did. They were fitted to revolve, in the first instance, with the idea of rising alike from land or water. They answered admirably for rising from the ground, no matter how rough, being far superior in this respect to ordinary wheels, but were useless as floats, otherwise than so far as mere buoyancy was concerned.

Tractors *v.* Propellers, etc.

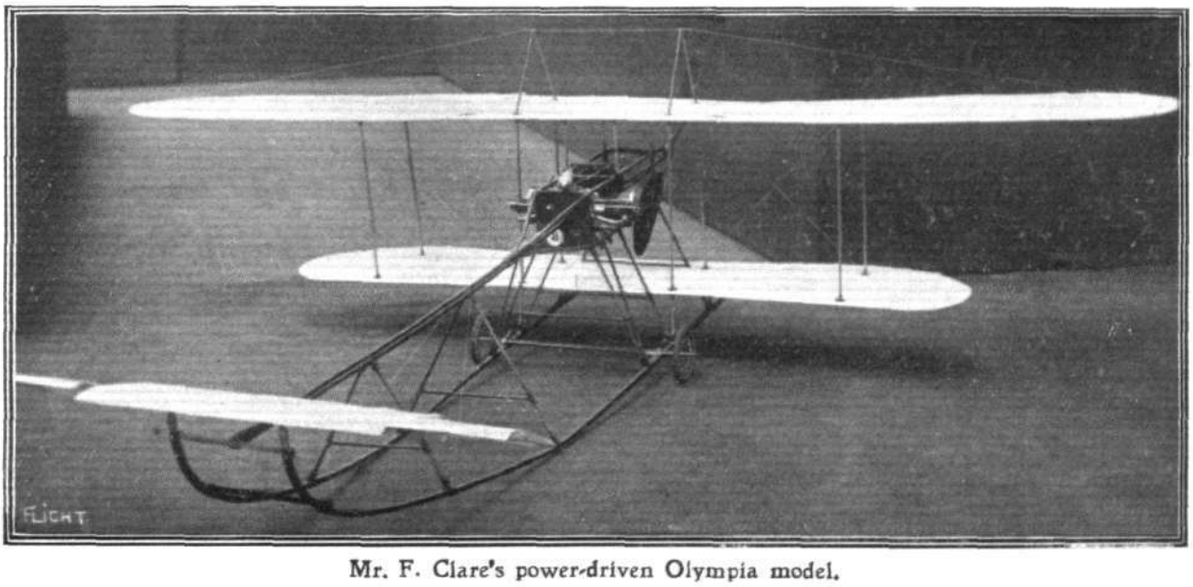
Mr. F. W. Jannaway, referring to the above, writes us as follows:—"Since I hold the same opinion in this matter as Mr. Bragg-Smith, there is no need for me to refer to this further. I do not, however, agree with Mr. Brasnett's remarks as to the members of the K. and M.A.A. tiring of the sport of model flying. I do not think many members have dropped out, only those who are not successful with their models, and others through business matters. I also think that a research branch on the lines indicated would not be a success, as a model, no matter how scientifically or automatically it may be built, could never be made to reconstruct any particular accident, as so much would depend on factors over which you could not possibly have any control, *i.e.*, the element of chance would play such an important part in the experiment. As soon as any model has left the flyer's hands the element of *personal* control is *nil*.

"I should very much like to see a research branch of the Association formed on a scientific basis [This is already being done].

"With reference to Mr. Brasnett's remarks *re* the *Model Engineer* competition, progress was shown, because this year it was for r.o.g. models, whereas last year it was for hand launched machines. As regards the matter of weight cutting, although the minimum was 4 ozs. there were at least 8 machines weighing over 7 ozs., two of which did over 40 seconds.

"It is therefore not fair to Mr. Louch's scientifically built model, which attained a duration of over 70 secs., which is a great progress over the duration held by Mr. Bragg-Smith's model in the competition mentioned. Some of the competitions in this year's programme are, I consider, a great advance—for instance, the weight lifting competition on July 5th, which will give some of the 'scientifics' a chance to come forward and show us what they can do in open competition."

Mr. G. H. Kilshaw (the winner of the only FLIGHT certificate of merit which it has so far been possible to award) writes as follows:—"The interesting letters of Messrs. N. V. Brasnett and R. V. Tivy were read with pleasure. I am rather in doubt as to the former's remark, 'that a one *hundred* second flight is of no more value than a *twenty* second one.' It stands to reason that with a model built on a proper scientific basis, say with the intention of testing plane efficiency or stability, the longer the duration the more thorough the observations of action during flight, and I should scarcely believe 20 secs. of much value in such a case. Why cannot those modellists who favour the scientific principle rally together, and either by forming a society or through other means engage in some useful work? I myself am willing to do anything I can to further these aims, but have so far found no local encouragement." We quite agree with Mr. Kilshaw's remarks *re* duration, we have always considered a 30 to 35 secs. flight as the minimum for observation purposes. With regard to the rallying of the scientifics, we are afraid our correspondent scarcely grasps the peculiar difficulties. In the first place, as we have already pointed out, no hard and fast line can be drawn between the various purposes for which a model may be built, *i.e.*, so far as its scientific qualities are concerned. Until this is grasped and



Mr. F. Clare's power-driven Olympia model.

admitted, you may have plenty of argument, but no practical results will follow. There is also the opinion held by many, which we state absolutely without any bias, and merely as a point which we have heard referred to on quite a number of occasions, and that is, that those who criticise so much the achievements of the "sports" (to adapt a word for the occasion) should first of all come forward in open competition and show that they can hold their own, or, at any rate, obtain a place in what they are good enough to call unscientific competitions. When they have done this, then let them talk and we (the sports) will listen to them, let them give advice and we will be prepared to follow it. Now, this opinion may be correct, or it may be absolutely wrong—a gross libel on the "Scientifics"; but whether it be right, or whether it be wrong, we must confess that we think it would be an excellent thing for any association or club, before admitting anyone as member of the research side, to require him to make a duration with an r.o.g. machine (minimum weight 8 ozs.) of 40 secs., or a hydro-aeroplane (minimum weight, 6 ozs.) of 30 secs.; and what the writer preaches in words he is quite prepared to fulfil in actual practice. I lay stress on this, because I have found those mechanical artifices which I had to resort to obtain these results of great use in other scientific work. As any specific case quoted is, I think, of much greater value than any general statement, I will just give it. I have quite recently had to carry out some research work on mono-rail models of a certain size and weight. I should have found it quite impossible to have brought these experiments to a successful issue but for the experience gained in the building of light so-called "flimsy" models. So far as gaining a good practical knowledge of mechanics and the strength of materials is concerned, I have not a moment's hesitation in giving aeronautical work the premier place, which is one reason why it is a great pity it is not more generally indulged in.

In order to have any rallying worth having, there must be a common rallying ground, and certain points, certain definite lines, of a really practical and not too difficult a nature, along which to proceed, must be laid down and generally accepted. As the matter has now been well ventilated, and all are, we think, quite agreed that model research work should henceforth receive more attention, what is now required are *practical* suggestions how such should be carried out. Personally, the writer cannot regard Mr. Brasnett's suggestion as (at present) of a practical nature, save in the case of certain fractures to be referred to next week.

KITE AND MODEL AEROPLANE ASSOCIATION.

Official Notices.

British Model Records.

Hand-launched	Distance	R. Lucas		590 yards.
	Duration	A. F. Houlberg		69 secs.
Off ground	Distance	C. C. Dutton		296 yards.
	Duration	A. F. Houlberg, J. E. Louch		80 secs.
Hydro. off water	Duration	F. Whitworth		37 secs.
Single-tractor screw, hand-launched	Distance	F. G. Hindsley		173 yards.
	Duration	J. E. Louch		68 secs.
Do., off ground	Duration	J. E. Louch		45 secs.

Competition.—The weight-carrying competition takes place to-day, Saturday, on Wimbledon Common; not at Greenford. The steering competition on the 12th will be held at Greenford, and entries for this event close to-day, Saturday. The fourth annual competition for the Gamage Challenge Cup for longest distance off ground took place on June 28th at Greenford. Out of 42 entries 37 competed, but although a stiff wind some good flights were made. The results of the first six were: 1. C. C. Dutton, Paddington Club, 520 yds.; 2 J. E. Louch, N.E. London, 490 yds.; 3. L. H. Slatter, K. and M.A. Assoc., 400 yds.; 4. A. Cannell, Paddington, 398 yds.; 5. J. McBirnie, K. and M.A. Assoc., 344 yds.; 6. S. Cannell, unattached, 333 yds. Mr. C. C. Dutton therefore holds the Cup for year, and takes the Gamage Gold Medal. Mr J. E. Louch and L. H. Slatter winning the Silver and Bronze Gamage Medals respectively. The judges were Messrs. W. E. Evans, and the hon. sec. Mr. Akehurst, in announcing the results regretted that the holder, R. C. Noordyn, of the Rotterdam Club, was unable to defend the Cup, but he hoped to compete in some competitions this year if possible, and in handing the Cup to the winner stated that the medals would be sent to the winners direct from Mr. A. W. Gamage, to whom the thanks of the association were due for the interest he had taken in this competition.

Kite Flying Competition.—Wimbledon Common, July 19th, at 3 o'clock. Entries close last post Saturday, July 12th. The Baden Powell Challenge Shield, presented by Major B. Baden Powell, F.R.A.S., Past President of the Association. For best kite of the year. Prizes: 1st, Gold Medal of the Association, and winner to hold Shield for year; 2nd, Silver Medal of the Association; 3rd, Bronze Medal of the Association. Open to members only. Rules: 1. Competitors may submit kites of any kind, with a minimum measurement of 20 ft., calculated by Kite Rule 2. 2. Competitors must be at the judges' flag at 2.30 sharp, any not present at that time may be disqualified. 3. Length of line or wire to be 300 yds. 4. The judges will take the angle of kites while in flight. 5. Marks will be awarded for angle, stability, strength of construction, and collapsibility. 100 marks for each test. Maximum marks, 400.

Model Engineer Exhibition.—Application forms can now be obtained from the hon. sec. for competitions to be held in connection with the exhibition. It is expected that the entry for power-driven machines and motor engines will be considerably increased. Members and friends are asked to forward their entries as soon as possible.

27, Victory Road, Wimbledon. W. H. AKEHURST Hon. Sec.

[Owing to the great pressure on our space Model Club Monthly Reports, Correspondence, &c., are held over till next week.—Ed.]

AIRSHIP NEWS.

Trials with the "Commandant Coutelle."

ON Sunday last the Zodiac dirigible "Commandant Coutelle," with Comte de la Vaulx in charge, carried out some altitude tests at St. Cyr. The airship passed over St. Germain and Cormeilles at a height of over 2,000 metres. On the 24th inst., the airship, with nine persons on board, made a long cruise over and around Paris.

German Government and Zeppelins.

ACCORDING to a message from Berlin, the German Government is bringing pressure to bear upon the Zeppelin works at Friedrichshafen not to accept any orders from outside sources, at any rate before the year 1916.

An Eight-Hour Trip by "L1."

THE German Navy Zeppelin "L1" left Johannisthal on the 17th ult. at midnight and cruised to Rugen Island in the Baltic Sea, the return journey being made *via* Stettin, where he alighted on the sea. The airship arrived back at Johannisthal at 8 a.m.

A Long Voyage by "Sachsen."

ALSO on the evening of the 17th ult., the Zeppelin liner "Sachsen" left Oos, near Baden, and cruised to Hamburg, the journey taking 9 hrs. 35 mins. On the morning of the 20th, the voyage was continued and Potsdam reached at mid-day.

PUBLICATIONS RECEIVED.

Causeries Techniques sans Formules sur l'Aeroplane. By Capt. du Genie Duchene. Paris: Librairie Aeronautique, 40, rue de Seine. Price 6 frs.

"*On the East Coast.*" By Percy Lindley. London: The Great Eastern Railway Co., 30, Fleet Street, E.C.

Valley of the Rhone. London: Paris, Lyons, and Mediterranean Railway, 179, Piccadilly, W.

Bulletin de l'Institut Aérotechnique de l'Université de Paris. III. *Etudes sur les Helices et les Surfaces d'Aviation Mesures sur les Aéroplanes en Plein Vol.* Paris: H. Dunod and E. Pinat, 47–49, Quai des Grands-Augustins. Price 6 frs.

Almanach de l'Aviation, 1913. Paris: Librairie Aéronautique, 40, rue de Seine. Price 1 fr. 50.

The Resistance of the Air and Aviation. By G. Eiffel. Translated by Jerome C. Hunsaker. London: Constable and Co., Ltd. Price 42*s.* net.

Motor and Gas Power Pocket Book. London: International Correspondence Schools, Ltd., Kingsway. Price 5*s.*

Aeronautical Patents Published.

Applied for in 1912.

Published June 26th, 1913.

12,655. N. A. THOMPSON. Aeroplanes.
13,568. F. T. WESTON. Safety helmet (head and neck).
22,295. P. DE CREQUY. Aeroplanes.
25,825. R. L. BERNARD. Aeroplanes.
30,099. H. BRUNO. Airships and airship housings.

Published July 3rd, 1913.

8,591. N. GLOBA. Mechanical flight.
15,564. J. WEISS AND — KEITH. Aerial machines.
19,395. G. NOTARIANNI. Safety devices for aerial machines.
21,424. R. E. JAMES AND F. A. THOMPSON. Aerial machines.
22,606. J. CASAP. Flying machines.
26,264. SOC. DITE AEROPLANES MORANE-SAULNIER. Landing frames for aeroplanes.

Applied for in 1913.

Published June 26th, 1913.

513. R. RUMPLER LUFTFAHRZEUGBAU. GES. Elastic girder for aeroplanes.
10,605. O. A. BUDIG. Stabilising apparatus.

Published July 3rd, 1913.

7,003. P. DE CRÉQUY. Contractible planes for aeroplanes.

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